DOCUMENT RESUME

ED 310 162 TM 013 823

AUTHOR Stapleton, Julia A.
TITLE Monitoring Student Proficiency with Computer-Managed Instruction: HSPT and Other Assessed Skills.
INSTITUTION New Jersey State Dept. of Education, Trenton. Div. of General Academic Education.
PUB DATE 87
NOTE 118p.
AVAILABLE FROM New Jersey State Department of Education, Distribution Services, 225 West State St., CN 500, Trenton, NJ 08625 ($5.75).
PUB TYPE Reports - Descriptive (141) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS Academic Achievement; Achievement Tests; *Basic Skills; *Computer Managed Instruction; Computer Software Reviews; Computer Uses in Education; Data Collection; Educational Resources; Elementary Secondary Education; Evaluation Methods; *Information Technology; *Management Information Systems; Minimum Competency Testing; Recordkeeping; State Standards
IDENTIFIERS *Monitoring; *New Jersey High School Proficiency Test; Proficiency Assessments

ABSTRACT

Software and computer management systems that enable educators to manage the monitoring of student progress in acquiring skills for the High School Proficiency Test (HSPT) and other standardized tests used in New Jersey schools are described in this study. Focus is on the data collection components for student skill proficiency using the computer as a tool for instructional management. Students in New Jersey are assessed annually in reading, mathematics, and language arts to identify those who meet established minimum levels of proficiency. The HSPT is the assessment instrument for grade 9 and is the key element in the state's effort to raise the basic skills standards for its students. Students in grades 3 through 8 and 11 through 12 are assessed on a variety of state-approved tests. Computer management tools can expedite the process of monitoring student achievement. Research on computer-managed instructional systems illustrates its wide application in a variety of educational settings. Four sections of annotated descriptions of systems and software provide a sample of products educators may want to investigate as a means of monitoring student competencies on the HSPT or other standardized tests. The four sections are: (1) skills software with student recordkeeping features; (2) comprehensive curricula systems; (3) networked systems; and (4) database software. These sections list the title, purpose, hardware, grade levels, description, training, costs, and distributor of each of 31 software packages. Systems and software are also indexed by subject, title, and producer. A 49-item list of references is included. Selected books and periodicals, related documents, and contacts in New Jersey are listed. The Evaluation Form and Computer-Managed Instruction Program Identification Form are appended. (SLD)

TM

ED310162

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

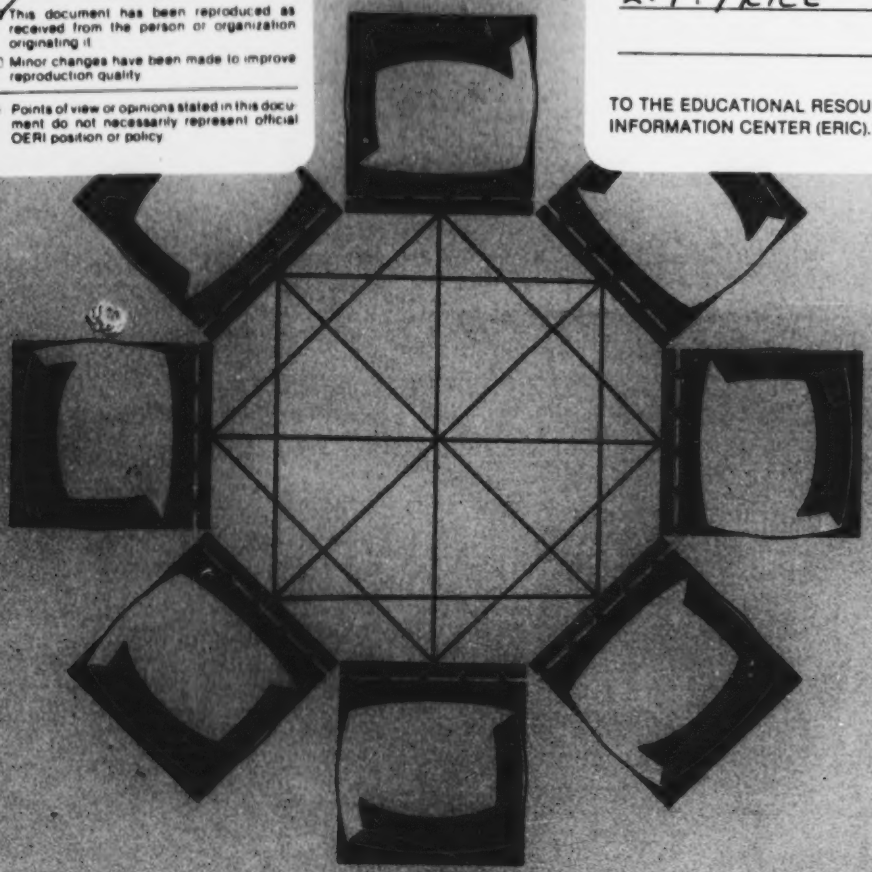
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

L. F. PRICE

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."



MONITORING STUDENT PROFICIENCY WITH COMPUTER-MANAGED INSTRUCTION:

HSFT and Other Assessed Skills

New York State Department of Education • Division of General Academic Education

BEST COPY AVAILABLE

Additional copies of this publication may be obtained by forwarding a prepaid written request to:

New Jersey State Department of Education
Distribution Services
225 West State Street, CN 500
Trenton, New Jersey 08625

There is a $5.75 charge per copy. Checks or money orders should be made payable to: "TREASURER, STATE OF NEW JERSEY." Please allow four to six weeks for delivery.

A price list and order form for other publications issued by the department are available upon request.

MONITORING STUDENT PROFICIENCY WITH COMPUTER-MANAGED INSTRUCTION: HSPT AND OTHER ASSESSED SKILLS

Saul Cooperman
Commissioner of Education

Joel Bloom
Assistant Commissioner
Division of General Academic Education

Julia A. Stapleton
Principal Author

NEW JERSEY STATE DEPARTMENT OF EDUCATION
225 West State Street
CN 500
Trenton, New Jersey 08625

Fall, 1987

PTM #700.21

STATE BOARD OF EDUCATION

JOHN T. KLAGHOLZ President	Seaside Park
JAMES JONES Vice President	Teaneck
S. DAVID BRANDT	Cherry Hill
MAUD DAHME	Annandale
BETTY A. DEAN	East Orange
MATEO F. DeCARDENAS	Union City
ANNE S. DILLMAN	Perth Amboy
ALICE A. HOLZAPFEL	Elizabeth
NANCY SCHAENEN	Madison
JAMES M. SEABROOK, SR	Bridgeton
ROBERT A. WOODRUFF	Elmer
DEBORAH P. WOLFE Representing the State Board of Higher Education	Cranford

Saul Cooperman, Commissioner of Education
Secretary

T. Edward Hollander, Chancellor of Higher Education
Ex-Officio

FOREWORD

To insure that students from New Jersey's schools are equipped with the skills needed to function in our increasingly complex and technological society, the New Jersey Department of Education has established a more rigorous testing program. The High School Proficiency Test (HSPT) is a key element of the testing program. It is administered to grade nine students in order to assess their mastery of the basic skills which educators and representatives of business, industry, and our communities have identified as necessary. Students in other grades are assessed annually in reading, mathematics, and language arts on a variety of state-approved commercially or locally developed tests.

To encourage success in mastery of these basic skills, it is recommended that districts monitor the acquisition of the skills which are part of the testing program as students grow and develop. Such monitoring helps teachers, administrators, parents, and students determine what skills are acquired, how achievement progresses over time, and what skills are still deficient for individuals, groups, classes, schools, and/or districts. Using the data from a district testing program does not necessarily require a sophisticated knowledge of curriculum or statistics. However, managing information on student skill acquisition is a burdensome task unless there is a systematic approach.

Several influential reports issued during the past year have recommended the use of computer technology to monitor and record individual skills achievement systematically. New Jersey school districts have also requested comprehensive information on computer-managed instruction. In response to these recommendations and requests, the department has prepared this document which contains a sampling of products that use technology to manage this process. It provides an overview of computer hardware and software useful for teachers and administrators. For school personnel interested in applying technology to track individual progress, Monitoring Student Proficiency with Computer-Managed Instruction: HSPT and Other Assessed Skills is a valuable source of information.

Saul Cooperman
Commissioner of Education

ACKNOWLEDGMENTS

Many professionals with a broad range of knowledge and experience were involved in the review of this document. Each contributed comments and ideas that assisted in its development. Special thanks are offered to:

Carol N. Scelza	Manager of Educational Technology Unit Division of General Academic Education
Pegeen M. Wright	Instructional Technology Curriculum Specialist Educational Technology Unit
Darlene Nowak	Coordinator Educational Technology Training Center - North
Ruth M. List	Coordinator Educational Technology Training Center - Central
J. Evans Jennings, Jr.	Coordinator Educational Technology Training Center - South
Julie P. Liederman	Instructional Specialist Regional Curriculum Services Unit - South
James M. Kiernan	Teacher - Computer Science North Bergen High School
Richard Springer	Computer Education Coordinator Neptune Township School District
Marshall E. Behr	Supervisor of Instruction and Curriculum Linwood School District
Stanley Rabinowitz	Curriculum Evaluation Specialist Academic and Cognitive Skills Unit Division of General Academic Education
Roseanne Hiatt Harris	Editor, Operations Unit Division of General Academic Education
Word Processing Specialists	Division of Administration

The author would also like to acknowledge the cooperation of the distributors and publishers who assisted in verifying the information on their products.

TABLE OF CONTENTS

	PAGE
Introduction	1
I. Testing in New Jersey	1
Standardized Tests	1
High School Proficiency Test	1
II. Computer-Managed Instruction	2
Research on Computer-Managed Instruction	3
Designs of Computer-Managed Instruction	6
III. A Selection of Systems and Software for Computer-Managed Instruction	8
Skills Software with Student Record-Keeping Features	11
Comprehensive Curricula Systems	37
Networked Systems	51
Database Software	65
IV. Conclusion	87
Bibliography	89
Indices of Systems and Software	93
By Subject	95
By Title	97
By Producer	99
Appendix A: Resources	101
Books and Periodicals	103
Related Documents of the New Jersey Department of Education	107
Contacts in New Jersey	110
Appendix B: Reader Input	115
Evaluation Form	117
CMI Program Identification Form	119

INTRODUCTION

The purpose of this document is to describe types of computer management systems and software that enable educators to manage efficiently the monitoring of student progress in acquiring skills for the High School Proficiency Test (HSPT) and other standardized tests used annually in New Jersey's schools. The first section describes the annual assessment program in the schools of New Jersey. The second section of this document provides background information on the use and effectiveness of computer-managed record keeping for instructional purposes. The categories and related products for computer-managed instruction are described in the third section. Explanatory notes are provided for each of the products described in the third section using an annotated bibliography format. The document is assembled as a resource to assist New Jersey educators in selecting and using computer systems and/or software to monitor skills which reflect student achievement and which are assessed in the annual testing program.

I. TESTING IN NEW JERSEY

Students in New Jersey are assessed annually in reading, mathematics, and language arts to identify pupils who meet established minimum levels of proficiency (N.J.A.C. 6:8-3.8). The HSPT is the means of assessment for grade nine. Students in grades 3-8, 10, and 11 are assessed on a variety of state-approved commercially or locally developed tests. Students in kindergarten to grade two are currently assessed by any valid and reliable means deemed appropriate by each district.

Standardized Tests

All tests used to meet the New Jersey Department of Education's assessment and evaluation requirements must satisfy the department's test review/approval criteria (Criteria for District Testing Programs, 1983). The department has an approved list of more than 50 standardized, commercially developed tests that meet its criteria. Locally developed tests, such as a writing sample test for writing assessment, must be certified as meeting technical criteria specified by the NJDOE. The instruments and indicators used in the assessment process must have demonstrated validity and reliability, must be administered systematically, and must be based on objective data.

High School Proficiency Test

The High School Proficiency Test (HSPT) is the key element in New Jersey's effort to raise the basic skills standards for its students. As part of the requirement to obtain a high school diploma in the state, students must pass the HSPT. This mandated test insures that students in New Jersey master

basic skills needed to become productive members of society before graduating from high school.

The HSPT consists of three sections: reading, mathematics, and writing. Within each section, the items are grouped by clusters which represent general skill areas. The reading section contains three clusters that assess literal comprehension, inferential comprehension, and study skills encompassing 32 skills. The mathematics section is comprised of seven clusters -- problem solving, pre-algebra, measurement and geometry, number concepts, computation of fractions, computation of decimals, and computation of percents for a total of 45 skills. The writing portion contains four clusters. The first three clusters assess sentence structure, organization of ideas, and editing encompassing 11 skills. The fourth cluster is a writing sample which requires students to produce an essay on a provided topic. The writing sample accounts for 60% of the score for the writing section. (For more information see: HSPT Directory of Test Specifications and Items, 1986; Skill Arrays for the New Statewide Testing System, 1983.)

The graduating class of 1989, the first class required to pass the HSPT in order to receive a state-endorsed diploma, was administered the HSPT as ninth graders in the spring of 1986. Each year every ninth grade student is now administered the HSPT. If a student fails to pass one or more sections, he or she will receive remedial instruction and will retake those sections.

The results of the HSPT should be used for determining which students need further diagnostic evaluation and possible remedial instruction, as well as for delineating which of the skills present the most difficulty for each of those students. The state provides results that include individual student reports which enable educators to determine where a pattern of errors exists thus indicating potential problem area(s) (HSPT School District Guidelines, 1986).

II. COMPUTER-MANAGED INSTRUCTION

According to the United States Department of Education publication, What Works: Research About Teaching and Learning (1986), frequent and systematic monitoring of students' progress helps students, parents, teachers, administrators, and policymakers identify strengths and weaknesses in learning and instruction. However, tracking skill development and monitoring problem areas is a time-consuming, record-keeping task for educators. Many skills are necessary to ensure student competency on the High School Proficiency Test, as well as on other standardized tests administered in New Jersey's schools. To provide maximum instructional leverage, therefore, educators should monitor student skill development with precision. Computer management tools can expedite the monitoring process because they are generally thorough and time efficient. An efficient system allows teachers to spend more time teaching and less time keeping records.

This document primarily addresses the components of data collecting for student skill proficiency using the computer as a tool for the instructional management. A variety of systems and software are described in the annotated bibliography. The common feature of all these entries is that each has a data collection component. Educational technology literature usually refers to this data collection component as "computer-managed instruction."

When educators use the term computer-managed instruction (CMI), they usually are referring to that part of computer-assisted instruction which collects data on individual performances as students interact with the computer programs. Computer-managed instruction in its purest form, however, does not offer instruction of any type. CMI manages instruction through computer record keeping which indicates students' mastery or nonmastery of specific objectives (Bitter & Camuse, 1984). For clarity in this document, software and systems that collect student performance data to be used in the management of the instructional process and tracking of students' performance will be referred to as computer-managed instruction.

Systems and software for computer-managed instruction range from a complex mainframe system serving thousands of terminals across the nation, each accessing its memory banks via telephone lines, to computer-managed instruction as simple as a single software program that includes a record-keeping component and runs on a stand-alone microcomputer. Between these two extremes of hardware and software are minicomputers, local area networks, hard disk utilization, and microcomputers with optical mark card readers.

Hardware for computer-managed instruction has altered dramatically in the past year (Birkhead, 1986a, 1986b; Sloane, 1987). Management systems originally designed to operate on mainframes or minicomputers now can operate on a microcomputer equipped with a hard disk drive. There is a proliferation of new machines with substantial memory that further enhance the microcomputer's capability for efficient instructional management. In addition, local area networks (LAN) have increased the power of microcomputers and made peripherals accessible to multiple users.

Networking provides access to student data for tracking skills and monitoring progress efficiently. The development of hardware and networking features enables teachers to use microcomputers for instruction while monitoring the progress of an entire class at one control center. All of these advances enhance record-keeping capabilities and make computer-managed instruction available to all teachers at every level of education.

Research on Computer-Managed Instruction

Computer-managed instruction (CMI) programs are receiving attention in education because they foster accountability which facilitates the development and mastery of skills (Belt & Skubal, 1974; Coffman, 1980; McHenry, 1980). As a tool to improve the instructional process, CMI makes record keeping more efficient (Belt & Spuck, 1973; Illick & Taylor, 1975),

provides teachers with more time for direct instruction (Artley, 1981; Chapin & Patterson, 1977; Witthuhn, 1986), and results in greater academic achievement for students (Hunnes, 1978; Kimball, 1982; Kromhout, 1970).

An early study on the effectiveness of the computer to manage skills-mastery programs (Kromhout, 1970) demonstrated that there was higher academic achievement for students participating in computer-managed courses than those enrolled in traditional courses. Similar findings were also reported by McHenry (1980) and Kimball (1982). Artley (1981) reported that because CMI efficiently tracks the acquisition of academic skills while allowing instructional objectives to be monitored and measured in concrete terms, there is greater mastery of skills. Also, using the computer for tracking complex skills, such as those needed for reading, releases teachers from tedious record-keeping tasks. Reports are available describing district programs throughout the country which successfully use computerized record-keeping systems to manage the instructional process.

School leaders in the Minneapolis Public Schools system, recognizing that CMI is an important tool to improve achievement, made computer-managed instruction a district priority in 1982. During 1983-84, CMI was pilot tested by monitoring student progress in reading and mathematics at three elementary schools. The success of the pilot resulted in the gradual increase of use of the CMI system with all 60 district schools operational on all aspects of the computer record-keeping system in 1986-87. Witthuhn (1986) reported that students in the Minneapolis system whose skills were monitored on the computerized instructional management system showed marked improvement in their achievement scores on district tests. Evaluations also indicated that the use of CMI allowed for an increase of 6 to 11 percent in the amount of time that teachers spent in direct instruction.

Other school districts also have reported academic improvement coupled with record-keeping efficiency as a result of using CMI.

- The Managed Instruction with Computer Assistance (MICA) Project, used successfully in the Madison Public Schools, Wisconsin (Chapin & Patterson, 1977), was begun in 1973 as a means of implementing and sustaining individualized programs of instruction. The MICA Project used the computer to integrate total management by maintaining objective and prescriptive data, defining the pathway of students through the curriculum, and maintaining student task allocation and completion data, thus freeing teachers from clerical burdens and providing more time for instruction.

- In the New Orleans school system, CMI was introduced to help educators determine if each child's needs were being met and skills mastered in order to relieve teachers of record-keeping duties and to improve the quality of their decision making (Levin, 1980). For example, a teacher could pinpoint problem areas and group students needing special help with the aid of a computer management program. An evaluation report on the impact of this

CMI utilization indicated that not only was record keeping easier, but using computer management resulted in higher achievement scores (Coffman, 1980).

- Use of a CMI-based reading program in one Kelloggsville, Michigan, elementary school in 1973-74 was so successful that the following year all of the elementary schools in the district adopted it. The program featured computerized diagnostic and prescriptive activities, tracked student progress, and generated individual and class reports. Hunnes (1978) concluded that the management factor played a key role in the marked improvement of reading ability for the students in the project. After three years' use by all schools in the Kelloggsville district, performance had risen from among the lowest in the state to well above the state average.

- Consistent findings on the benefits of CMI in reading instruction have been reported by Brebner, Hallworth, McIntosh, and Wontner (1980) based on a six-year study of CMI conducted in an elementary school located in Calgary, Canada.

- In a Lawrence, Kansas school, a comparison of students in a computer-managed reading program and students in a regular program demonstrated that those with CMI gained significantly more reading skills in the same time period (Havlicek, 1982).

Studies also show that computer-managed instructional systems have been used at all levels and types of education including special education, training courses for the military, and institutional facilities, as well as at elementary schools, high schools, and colleges (Gorth & Nassif, 1984). Although the educational settings may vary, the computer-managed instruction systems all are used basically to individualize instruction and track student skill growth.

Military use of computer-managed instructional systems is evidenced by several reports describing Air Force technical training. One system, the Advanced Instructional System (AIS), which was described in a 1973 report, is similar to systems used since then in schools. The AIS managed the instructional process with pretests, lesson options based on student characteristics, posttests, and feedback for students and instructors (Espeland, 1973). The Air Force found that this system changed the instructor's role from lecturer/testor to advisor and training counselor (Campbell, 1977). A follow-up study (McCombs, 1979) indicated that the system delivered effective and efficient training to the students.

Several reports have been published about the PLATO Corrections Project for inmates of the Illinois adult correctional facilities (Gilpin, 1982; Illinois University, 1983; Meyer, 1983). The project, conducted by the Computer-Based Education Research Laboratory at the University of Illinois, provided computer-assisted instruction in basic skills, as well as in several vocational and a few advanced academic subjects. Computer management tracked student performances and managed the instructional

process. The study determined that there were gains for all students, and that the instructional delivery system, especially the computer management component, was effective.

In the area of special education, computers have assisted in the development of Individual Education Programs (IEPs) mandated by Public Law 94-142 (The Education for All Handicapped Children Act of 1975). IEPs set forth goals and measurable objectives and describe programs of individually designed educational activities. A comprehensive study conducted in 1983 (and updated in 1984) described and evaluated major computer programs used in generating IEPs (Enell & Barrick). Some of the conclusions of the study were that computer-generated IEPs provide substantial time-savings in the annual review process, are used more for instructional purposes by both teachers and parents, and aid in making the paperwork process more useful for daily instruction.

Several districts in New Jersey use the computer to track student skill acquisition; two of these districts are Newark and Ridgewood. The Newark school district adopted an instructional management system to track elementary student progress in reading skills and introduced it in all 60 of the elementary schools as of 1986-87. Math skills soon will be tracked in the computer management system also. The district's Computer Education and Technology Department is working with the district's HSPT Department to determine how the system can be used to track skill development for the HSPT. The projected time for accomplishing this task is 1987-88.

The district of Ridgewood uses computer-generated reports to track skill proficiency for elementary, junior, and senior high school students. Computer-generated reports are developed using data from the annual achievement tests, including the California Achievement Test, High School Proficiency Test, and Preliminary Scholastic Achievement Test. These reports provide a profile of class and individual achievement scores in each specific skill area. The reports are used by the teachers for grouping and individual needs assessment.

The previous examples serve to illustrate the many applications of computer-managed instruction in a variety of educational settings.

Designs of Computer-Managed Instruction

Computer-managed systems and software have varying designs and data collection capabilities. This document is concerned with computer record keeping that collects student data on the proficiency skills needed to be successful on the HSPT and other standardized tests. These data permit the educator to determine the learning status of students. The data can be collected using established or customized objectives.

Skills software, comprehensive curricula systems, and networked systems (see pages 11-63) are generally designed with established objectives that may or may not meet the user's needs. Often these sets of objectives are taken from lists used successfully over a number of years or determined by the

learning requirements of a sampling of school districts. A few manufacturers are willing to customize the objectives to particular needs, or the software may allow the purchaser to do so. In some cases, the established objectives in the systems and software are very similar to skills tested on the HSPT and other standardized tests.

Recently, several systems and software publishers have customized their programs to correlate with HSPT skills, and some have correlated the objectives to other standardized tests. Those systems and software with specific correlations to the HSPT and other standardized tests are indicated with the notation ** after the program title in part three of this document.

Some software for instructional management is generic or general purpose. In this document, generic programs are described in the "Database Software" section. Generic programs are designed to be customized by the publisher or user to fit specially designed criteria. For example, one generic package allows the user to select learning outcomes, criteria for mastery, and references to instructional material. These generic systems do not provide instruction; they guide the process through computer management.

Having established the data to be collected, the next consideration is the manner of data collection. Data are collected in a variety of ways. One type of data collection is a computerized version of criterion referenced for instructional management with a mastery testing component. Data are collected in the following manner. The student takes a mastery test and enters the data on either the computer keyboard or a card that can be read by an optical card reader. Cards (or bubble sheets) allow more students to be tested in a given period of time. The cards are inserted into the optical card reader attached to the microcomputer. The responses indicated on the card are read and marked. Results are stored in the computer's memory. This system can provide data on the skills that have been mastered by individual students, groups, classes, schools, and districts. In this document, this type of data management is described in the "Database Software" and "Networked Systems" sections.

Computer-managed instruction can include mastery testing and computer-assisted instruction to support established objectives and criteria in the system. Such extensive programs are described in the section on comprehensive curricula systems. Often the system can encompass courseware that features progression in a single subject (or several subjects) for a large range of grade levels. Some of these types of comprehensive systems generate individual customized worksheets or tests according to individual student's needs reflected by accumulated data in the computer's memory. Other options of the comprehensive curriculum computer systems are teacher guides, student workbooks, and individualized learning prescriptions. The prescriptions not only enumerate the objectives to be mastered, but list specific textual and other learning materials that would enhance the achievement of these objectives.

Deciding which system and/or software suit particular needs is difficult. The foregoing indicates that there are many choices. The following

describes features of some of the most popular computer management products to assist educators who are interested in using technology to manage the instructional process. At the end of the descriptions, some of the New Jersey educators who use the software/systems are listed. Because they are experienced users of the programs, the educators are important sources, and the reader should consult with some of these contacts. More information on the products can also be obtained by contacting the distributors listed at the end of each product description. To further assist the reader, the appendix lists several resources with more comprehensive material on hardware and software for computer-managed instruction.

III. A SELECTION OF SYSTEMS AND SOFTWARE FOR COMPUTER-MANAGED INSTRUCTION

The objective of computer-managed instruction is to collect and process information which will enable the instructional staff to provide the best learning environment for each student (Tolman & Alfred, 1984). Data can be organized into a report that both teachers and administrators can use to monitor how a particular student, class, classes, or grade levels are progressing in achieving targeted learning (Goodson, 1984). This management can include features, such as student record keeping, scheduling of learning units, control of instructional presentation, and resource use and/or allocation. It is not the purpose of this document to describe every computerized instructional management system product available on the market. The products on the following pages have a common feature: data collection capabilities which permit educators to track, record, and report on the development of skills by students.

Since published evaluations and reviews are not generally available for the type of product contained in this document, the following criteria were used in selecting material. To be included, the computerized instructional management system must:

- have the capability to collect data of individual student proficiency with emphasis on the skills tested on the HSPT and other standardized tests;
- be utilized successfully in New Jersey's school districts or be accessible to New Jersey educators; and/or
- have an efficient and systematic method for reporting student skill progress.

The information in this document is assembled as a resource to enable educators to use technology to monitor student competencies for the HSPT and other standardized tests. For the student, technology-based education promises to help match the learning to his or her individual needs; for the

teacher, it promises to keep track of the increasingly complex records that such learning requires (National Task Force on Educational Technology, 1986). The research described previously in this document illustrates that such monitoring raises the productivity of instruction while reducing tedious record-keeping work.

This document contains four sections with annotated descriptions to provide a sampling of systems and software that contain computerized instructional management features. The section categories are:

- Skills Software with Student Record-Keeping Features
- Comprehensive Curricula Systems
- Networked Systems
- Database Software

****

NOTE

The New Jersey Department of Education does not endorse any of the products included in this document.

The document was developed as a resource to identify a sampling of products that educators may want to investigate further as a means of monitoring students' competencies for skills tested on the HSPT and other standardized tests.

****

Replace this page with index for

Skills Software with Student Record-keeping Features

Skills Software with Student Record-Keeping Features

To provide a means for differentiating the various types of software programs available today, the term skills software will be used to represent software which provides instruction in a set of skills within a particular subject area. Unlike comprehensive curricula systems, skills software focuses only on isolated skills within a subject area and operates on stand-alone microcomputers (e.g., Apple, Commodore, IBM, Radio Shack....) For example, a language arts program which drills students on the correct use of capital letters or a mathematics program which provides students with practice in converting fractions to decimals would be included in this section.

Most skills software falls into the category of computer-assisted instruction (CAI). CAI programs generally use traditional teaching methods, such as drill and practice, tutorial, demonstration, simulation, and instructional games (Cheever, et al., 1986). Some skills software has computer-managed instruction (CMI) which tracks individual student progress by recording and reporting the students' performance as they use the program.

To be included in this section, the skills software programs must:

- have CMI features that record and report performance;
- have received favorable evaluations or reviews; and
- promote skill development for the HSPT and other standardized tests.

Since one of the criteria is that the programs develop skills for the HSPT, some of the listed software are from Computer and Video Instructional Materials - HSPT Resource Guide: Writing/Reading/Mathematics (see "Related Documents of the New Jersey Department of Education," Appendix A). The three HSPT resource guides assist educators in identifying software that correlates to the skills on the test. Stringent criteria were used in selecting the computer programs contained in the guides. The software must have received favorable reviews in educational computer journals, must be recommended by nationally recognized computer program evaluation services (such as Educational Products Information Exchange (EPIE) Institute or MicroSIFT), and/or must be recommended by computer-using educators. The programs that are listed in the HSPT resource guides are indicated by an asterisk (*).

Some of the programs are available for review at one or more of the Educational Technology Training Centers (ETTCs); these are indicated with a plus symbol (+). See "Contacts in New Jersey," Appendix A, for locations of the ETTCs. It is strongly recommended that programs be previewed before considering purchase. Software and systems with favorable reviews may not be suitable for particular purposes, and this is best determined by previewing programs and examining documentation before considering purchase.

Skills software with CAI and CMI generally operates in the following manner. The software provides instruction and collects data on individual performances. The data are collected when the student enters information,

answers question, and/or takes a test at the keyboard. This input is automatically recorded, the data are accumulated, and the performance of individuals is reported. Reporting can be displayed on the screen and/or printed out. Thus, the computer provides students with instruction in a specific subject or skill area and simultaneously monitors student progress.

Although skills software programs are for individual or stand-alone microcomputers, it is possible to multiple load or even network some software for efficient computer-managed instruction. (For more information, see "Networked Systems" on page 51.)

Following is a representative sampling of skills software for microcomputers with relevant computer-managed instruction.

TITLE: **Capitalization Plus *+**
by Mindscape, Inc. (formerly published by Microcomputer Workshop Courseware)

PURPOSE: To teach capitalization rules.

HARDWARE: Apple II family and one disk drive.
Network version is available.

GRADE LEVELS: Four to twelve.

DESCRIPTION: Brief instruction and drill on capitalization rules are provided. The program presupposes the student can recognize proper nouns, conjunctions, articles, program format, and prepositions and features error-specific, remediating feedback. Average lesson is 25 minutes.

The database management system allows the teacher to track student progress. The diagnostic portion monitors and reports areas of difficulty.

TRAINING: No special training is necessary.

COSTS: $44.95 for single copy.

DISTRIBUTOR: Mindscape, Inc.
3444 Dundee Road
Northbrook, Illinois 60062
(800) 221-9884 or (312) 480-7667

[or]

Microcomputer Workshops Courseware
225 Westchester Avenue
Portchester, New York 10573
(914) 937-5440

* Included in HSPT Resource Guide: Writing

+ Available for review at ETTCs

TITLE: **Cloze Plus Program *+**
by Milliken Publishing Company

PURPOSE: To develop comprehension skills and vocabulary through structured cloze and context analysis activities.

HARDWARE: Apple II family, disk drive, and printer (optional).

GRADE LEVELS: Three to eight.

DESCRIPTION: The program which builds reading comprehension skills, vocabulary, use of contextual analysis, and test-taking skills, presents exercises that develop and reinforce interpretating and associating, identifying same/opposite meaning, identifying definition, making comparisons/contrasts, identifying pronoun antecedents, and noting similarities and differences. Correct answers reveal pieces of a graphic puzzle grid that relates to the story being read. Packages may be tailored to fit specific needs of schools.

Once a student has been registered on a disk, he/she may be given a specific assignment or may choose an assignment. The management program will maintain all records and identify students who are having difficulty.

TRAINING: Teacher's guide is available.

COSTS:

- Any three-level package is approximately $425 (contains twelve disks and teacher's guide).
- Any individual level is approximately $150 (contains four disks, and teacher's guide).
- Individual disks with back-up and teacher's guide are approximately $60.
- Teacher's guide is approximately $10.
- Volume discounts are available.

* Included in HSPT Resource Guide: Reading

+ Available for review at ETTCs

DISTRIBUTOR: Charles Eisenberger, Representative
Milliken Publishing Company
8 Grace Road
East Brunswick, New Jersey 08816
(201) 257-4115

[or]

Milliken Publishing Company
1100 Research Boulevard
P.O. Box 21579
St. Louis, MO 63132-0579
(314) 991-4220

CONTACTS IN NEW JERSEY USING Cloze Plus Program:

Robert Darden, Basic Skills Director — Middlesex County
New Brunswick Public Schools
24 Bayard Street
New Brunswick, NJ 08901
(201) 745-5416

Maureen Flynn, Chapter 1 Coordinator — Monmouth County
Freehold Regional H.S. District
11 Pine Street
Englishtown, NJ 07726
(201) 431-8538

Barbara Bracks, Supervisor of Instruction — Ocean County
Toms River Intermediate Schools - East & West
Toms River, NJ 08753
(201) 341-9200 x226

Owen Engler, Director of Secondary Education — Passaic County
Clifton Public Schools
745 Clifton Avenue - Box 2209
Clifton, NJ 07013
(201) 470-2269

TITLE: **Comprehension Power Program** *+
by Milliken Publishing Company

PURPOSE: To develop reading skills for literal understanding, interpretation, analysis, evaluation, and appreciation.

HARDWARE: Apple II family, disk drive, and printer (optional).

GRADE LEVELS: Four through twelve. Program available on grade levels one through three (high interest/low vocabulary) for special needs junior and senior high school students.

DESCRIPTION: The Comprehension Power Program is an inductive skill-building program for students. Materials are available for junior and senior high school students who are reading at extremely low levels. There are 25 skill areas with three activities for each skill: (1) preparation that includes new vocabulary words; (2) preview that features key sentences from the reading selection; and (3) comprehensive reading. When the reading segment is finished, the student answers comprehension questions. The program then gives a summary of the performance, and the information is automatically recorded in the student's file. The management program totals performance data for an entire disk. Student difficulties in one or more of the 25 skill areas can be readily identified.

TRAINING: Teacher's guide is available.

COSTS:

- Any three-level package is approximately $425 (contains twelve disks and teacher's guide, three reading selections books, and information sheets).
- Any individual level is approximately $150 (contains four disks, teacher's guide, reading selections book, and information sheets).
- Individual disks with back-up and teacher's guide are approximately $60.
- Teacher's guide is approximately $10.
- Reading selections books (per level) are approximately $3.
- Volume discounts are available.

* Included in HSPT Resource Guide: Reading

+ Available for review at ETTCs

DISTRIBUTOR: Charles Eisenberger, Representative
Milliken Publishing Company
8 Grace Road
East Brunswick, New Jersey 08816
(201) 257-4115 [or]

Milliken Publishing Company
1100 Research Boulevard
P.O. Box 21579
St. Louis, MO 63132-0579
(314) 991-4220

CONTACTS IN NEW JERSEY USING Comprehension Power Program:

Ken Kelly, Reading Coordinator — Bergen County
Waldwick High School
Wyckoff Avenue
Waldwick, NJ 07463
(201) 652-9000

Patricia Mayer, Basic Skills Coordinator — Camden County
Black Horse Pike Regional School District
Triton High School
Schubert Avenue
Runnemede, NJ 08078
(609) 939-4500

James Chapman, Vice Principal — Camden County
Pennsauken High School
Hylton Road
Pennsauken, NJ 08110
(609) 662-8500

James Donovan, Superintendent — Essex County
West Orange Public Schools
22 Municipal Plaza
West Orange, NJ 07052
(201) 736-7900

Geraldine Murphy, Curriculum Coordinator — Ocean County
Memorial Middle School
Laura Herbert Drive
Point Pleasant, NJ 08742
(201) 892-4050

Barbara Bracks, Supervisor of Instruction — Ocean County
Toms River Intermediate School-East & West
Toms River, New Jersey 08753
(201) 341-9200

TITLE: **Computer Study Program for the HSPT *+****
Mathematics, reading, and writing programs are available as separate programs.

by Instructivision

PURPOSE: To reinforce skills tested on the New Jersey High School Proficiency Test.

HARDWARE: Apple II family, IBM PC or PC jr., or Tandy 1000 with single disk drive and printer (optional).

Conversions to other microcomputer systems currently being completed.

GRADE LEVELS: Seven to twelve.

DESCRIPTION: Program components include two test disks, two skill builder disks, one program disk, and one user's manual.

Each subject area package contains two practice tests and a series of skill builders. Student takes pre-test, receives an analysis of performance, and uses the skill building portion of the program to strengthen abilities. Test/tutorial modes provide students with a wide range of options.

Computer management is available for 15 students simultaneously. The management features include individual analysis of results in each skill area, directed skill practice, and printed reports.

TRAINING: No special training required.

COSTS: Approximately $100 for each subject area.
Site licensing with various options is available.

DISTRIBUTOR: Instructivision
3 Regent Street, Suite 305
Livingston, New Jersey 07039
(201) 992-9081 or
(800) 445-9997 (outside of New Jersey)

* Included in HSPT Resource Guide: Mathematics

+ Available for review at ETTCs

** Correlated to the HSPT

CONTACTS IN NEW JERSEY USING Computer Study Program for the HSPT:

(Due to space limitation, not all could be listed).

Carolyn Paterson, Vice Principal — Atlantic County
Atlantic City High School
3701 Atlantic Avenue
Atlantic City, NJ 08401
(609) 344-4453

Gerard Kiely, Mathematics Department Chairperson — Hudson County
Hoboken High School
Ninth and Center Streets
Hoboken, NJ 07030
(201) 420-2300

Ray Levandowski, Mathematics Department Chairperson — Hunterdon County
North Hunterdon Regional High School
Route 31
Annandale, NJ 08801
(201) 735-5191

Peter Walling, District Supervisor-Computer Education — Mercer County
Trenton Public Schools
108 North Clinton Avenue
Trenton, NJ 08609
(609) 989-2899

George Zupko, Assistant Superintendent — Middlesex County
Perth Amboy Public Schools
178 Barracks Street
Perth Amboy, NJ 08861
(201) 826-3361

Patricia Marascio, Computer Coordinator — Monmouth County
Middletown Township Public Schools
59 Tindall Road
Middletown, NJ 07748
(201) 671-3850

Owen Engler, Director of Secondary Education — Passaic County
Clifton Public Schools
745 Clifton Avenue, Box 2209
Clifton, NJ 07013
(201) 470-2269

Steven Cohen, Computer Coordinator, Media Center — Passaic County
Paterson Public Schools
823 East 28th Street
Paterson, NJ 07503
(201) 881-6344

TITLE: **Diascriptive Reading *+**
by Educational Activities, Inc.

PURPOSE: To teach and reinforce five reading areas: main idea, sequence, details, vocabulary, and inference.

HARDWARE: Apple II family, Commodore 64, TRS-80 I or III, or IBM PC and PC jr. Disk Drive. Printer is optional.

GRADE LEVEL: 1.5 to 10 (remedial 11 and 12).

DESCRIPTION: There are three versions of this program, I, II, and III. Diascriptive Reading I is for grade levels 1.5 through 5.5, Diascriptive Reading II is for instructional levels three to eight, and Diascriptive Reading III is for grade levels six to ten, as well as 11 and 12 remedial instruction.

The program diagnoses, prescribes, and evaluates reading skills. Students begin by taking placement tests to determine entry levels in each of the five skill areas (main idea, sequence, details, vocabulary, and inference). The student is advanced or moved back automatically, based on performance. The producer states that items are ranked according to difficulty and are correlated with the CTBS and SAT standardized tests. Support materials include reproducible student and class record sheets. Records show student's starting level, current level, and performance for each skill area.

TRAINING: No special training is necessary.

COSTS: Diascriptive Reading I costs approximately $295 for 6 disks (one diagnostic and 5 skill area disks) plus teacher's guide, and reproducible student and class record sheets.

Diascriptive Reading II and III cost approximately $365 each for 7 disks consisting of 36 programs. Network versions are available.

DISTRIBUTOR: Educational Activities, Inc.
P.O. Box 392
Freeport, NY 11520
(800) 645-3739

* Included in HSPT Resource Guide: Reading

\+ Available for review at ETTC - Central.

TITLE: **High Intensity Learning System 2 (HILS2) with HILS2 Microcomputer Management** by Random House, Inc.

PURPOSE: (1) HILS2 is an instructional program in reading and math.

(2) HILS2 Microcomputer Management is a database program for entering information needed to automate record keeping.

HARDWARE: Apple II family, IBM PC, or TRS-80 with floppy or hard disk drive.

GRADE LEVELS: Two to nine.

DESCRIPTION: HILS2, the instructional component, has curriculum materials for reading and mathematics that provide customized instruction. The instructional materials are print-based and computer-assisted. The print-based materials are from over 50 different publishers and include books, workbooks, audiovisual programs, and manipulatives. A broad range of computer courseware is also available. The program is structured by a mastery learning sequence of either reading or math objectives. Additional objectives can be added or customized to monitor skill development for standardized tests and the HSPT.

HILS2 Microcomputer Management for reading and/or mathematics store individual student records for up to 306 students on one floppy disk. Each student can be monitored for approximately 250 instructional objectives. The computer scores, records, updates, and stores student performance based on test data. Reporting features include identifying special instructional need groups, overall progress reports, or continuous assessment of student progress. Program has report/letter formats and lists of objectives in place. Individualized or standardized letters, memos, and reports to parents, teachers, and administrators can be generated and printed. There are two management programs, one for reading and one for mathematics.

TRAINING: Manual and demonstration disk provide step-by-step instruction.

COSTS: The CMS software administrative package costs about $1250. HILS2 reading or math software programs are approximately $500 each.

DISTRIBUTOR: Mr. Patrick J. Ricci
Random House, Inc.
104 Summit Court
Lakewood, New Jersey 08701
(201) 364-0246

[or]

Random House, Inc.
201 East 50 Street
New York, New York 10022
(212) 751-2600 or (800) 638-6460

TITLE: **Math Assistant I and II +**
by Scholastic, Inc.

PURPOSE: To assist educators in diagnosing students' errors and increasing math achievement for addition and subtraction (I) or multiplication and division (II).

HARDWARE: Apple II family with one or two disk drives and a printer.

GRADE LEVELS: Math Assistant I - Grades one to four.
Math Assistant II - Grades three to six.

DESCRIPTION: Math Assistant I is an assessment tool suitable for grades one to four or whenever error analysis is needed in addition and subtraction.

Math Assistant II is an assessment tool suitable for grades three to six or whenever error analysis is needed in multiplication and division.

Math Assistant I and II present sample tests. The teacher has an option to create tests. Automatic scoring records errors by student, group, and/or class. The 80 most common errors (20 each for addition, subtraction, multiplication, and division) are tested on the computer-generated test.

Students are tested at the computer or with paper and pencil. A printout of tests (with answer key) can be obtained for group or class administration at students' desks. If the test is taken by an individual at the keyboard, then the computer automatically scores the test, analyzes answers, and keeps a record of the response.

The programs also are suitable for drill and practice. The publisher recommends programs as preparation for standardized tests.

TRAINING: No special training required.

COSTS: Math Assistant I and II may be purchased separately for approximately $80 each. If purchased together, the cost is approximately $130. Components include one two-sided program disk, one data disk, a back-up disk of each, and a user's handbook for each separate program.

+ Both programs are available for review at ETTC-South.

DISTRIBUTOR: Suzanne Jacobs
Scholastic School Sales
185 Gettysburg Way
Lincoln Park, New Jersey 07035
(201) 633-9693

[or]

Scholastic, Inc.
P.O. Box 7502
2931 East McCarthy Street
Jefferson City, MO 65102
(800) 325-6149

TITLE: **Math Concepts I & II *+**
by Hartley Courseware, Inc.

PURPOSE: To provide skills practice on mathematical concepts that frequently cause difficulty.

HARDWARE: Apple II family and one disk drive.
Network version available.

GRADE LEVELS: One to five.

DESCRIPTION: The program is designed for supplementary activities in number concepts for elementary math. Lessons are carefully sequenced with many examples and hint frames to help the student work independently. Concepts range from odd/even and counting by fives to greatest common factor and least common multiple. Lessons may be modified by the teacher. The documentation includes a placement test. Student progress is recorded by the computer as student moves through the lessons.

TRAINING: No specific training required. The documentation provides information on the menu selections.

COSTS: Approximately $40.

DISTRIBUTOR: Hartley Courseware, Inc.
133 Bridge Street
Dimondale, MI 48821
(800) 247-1380

* Included in HSPT Resource Guide: Mathematics

+ Available for review at ETTCs

TITLE: **Math Sequences ***
by Milliken Publishing Company

PURPOSE: To provide a comprehensive, objective-based mathematics curriculum.

HARDWARE: Apple II family or Atari 800 with disk drive. Printer is optional.

GRADE LEVELS: One to eight.

DESCRIPTION: Individualized assignments in drill and practice format are provided. There are an unlimited number of different practice problems at each level that are randomly generated. All work is performed on screen. The courseware features 12 mathematics topics, such as number readiness, addition, subtraction, multiplication, division, laws of arithmetic, integers, fractions, decimals, percents, equations, and measurement formulas. Also available are pre- and post-test disks that can be used to determine the appropriate starting level for a student or to verify mastery of the material. The worksheet generator disks provide randomly generated paper and pencil practice on basic computation for addition, subtraction, multiplication, division, integers, fractions, decimals, and percents for students at their desks.

The management program tracks and graphs each student's performance. Problem areas are automatically identified. Teachers may also select the number of problems that each student must work at every level before being evaluated. Other features include the transfer of classnames from one disk to another, faster assignment entry, and back-up of student records.

TRAINING: Teacher's guide is available.

COSTS:

- Math Sequences package - approximately $500 (17 disks and teacher's guide).
- Above package with 17 back-up disks approximately $740.
- Four Pak - approximately $150. (Any four disks from 17 disk set (in complete package) plus teacher's guide).
- Above package with four back-up disks approximately $225.
- Individual disks with back-up and teacher's guide - approximately $60.

*Included in HSPT Resource Guide: Mathematics

- Pre- and post-test disks - approximately $20 each.
- Worksheet generator (Disks I or II) - approximately $40 each.
- Teacher's guide is approximately $10.
- Volume discounts and reduced prices with site membership are available.

DISTRIBUTOR: Charles Eisenberger, Representative
Milliken Publishing Company
8 Grace Road
East Brunswick, New Jersey 08816
(201) 257-4115

[or]

Milliken Publishing Company
1100 Research Boulevard
P.O. Box 21579
St. Louis, MO 63132-0579
(314) 991-4220

CONTACTS IN NEW JERSEY USING Math Sequences:

Roger McEnnis, Superintendent — Bergen County
Midland Park Schools
31 Highland Avenue
Midland Park, NJ 07432
(201) 444-1400

Vincent Martone, Assistant Math Coordinator — Hudson County
Jersey City Board of Education
346 Claremont Avenue - Sixth Floor
Jersey City, NJ 07305
(201) 915-6103

Edward Sahagian, Mathematics Supervisor — Hudson County
North Bergen School District
7407 Hudson Avenue
North Bergen, NJ 07046
(201) 868-1000 x301

Geraldine Travis, Curriculum Specialist for Computers — Middlesex County
Woodbridge Schools
School Street
Woodbridge, NJ 07095
(201) 750-3200 x265

Charles Murphy, Principal
Union Township School District
Battle Hill Elementary School
Killiam Place
Union Township, NJ 07083
(201) 688-1200

Union County

TITLE: **Sentence Combining Program *+**
by Milliken Publishing Company

PURPOSE: To provide instruction and practice in applying rules of standard English usage to the building of increasingly complex sentences.

HARDWARE: Apple II family, disk drive, and a printer (optional).

GRADE LEVELS: Four to nine.

DESCRIPTION: The program is divided into two separate packages--SENCOM I (Grades four through eight) and SENCOM II (Grades six through nine). The programs cover such topics as inserting adjectives and adverbs, coordinating conjunctions, relative pronouns, subject/verb agreement, complements of linking verbs, gerund phrases, and making infinitive phrases. Also, SENCOM I and SENCOM II each contain a challenge disk featuring a group of sentences that the student must rewrite into a paragraph. Creative graphics are used and interactive examples are provided in the presentations. Practice exercises are given using the concepts introduced. When a student demonstrates mastery, he/she is moved to the next lesson. Individual mastery levels can be assigned to each student. The management program will identify any students having difficulties or failing a lesson.

TRAINING: No special training required.

COSTS:

- Combined package (SENCOM I and II) is approximately $195 (contains six disks, teacher's guide, and reproducible masters book).
- Individual package (SENCOM I or II) is approximately $105 (contains three disks, teacher's guide, and reproducible masters book).
- Individual disks with back-up and teacher's guide are approximately $60.
- Challenge SENCOM disks are approximately $20.
- Teacher's guide is approximately $10.

* Included in HSPT Resource Guide: Writing

\+ Available for review at ETTCs

- Reproducible masters book is approximately $10.
- Volume discounts and reduced prices with site membership are available.

DISTRIBUTOR: Charles Eisenberger, Representative
Milliken Publishing Company
8 Grace Road
East Brunswick, New Jersey 08816
(201) 257-4115

[or]

Milliken Publishing Company.
1100 Research Boulevard
P.O. Box 21579
St. Louis, MO 63132-0579
(314) 991-4220

CONTACTS IN NEW JERSEY USING Sentence Combining Program:

Maria Salinas, Compensatory Education English — Camden County
Administrative Annex
Camden Board of Education
1656 Kaighn Avenue
Camden, NJ 08103
(609) 541-1181

Michael Asher, Resource Room Teacher — Sussex County
Verona High School
151 Fairview Avenue
Verona, NJ 07044
(201) 239-3300

TITLE: **Skills Bank *+**
by Softwriters, Inc.

PURPOSE: To provide pretesting, instruction, posttesting, and reporting for over 200 skills, concepts, and rules with topics found on HSPT and other standardized tests.

HARDWARE: Apple II family with one or two disk drive.
Printer is optional.
Also available for IBM, Tandy, and IBM compatibles.

GRADE LEVELS: Four to adult education levels.

DESCRIPTION: The complete package contains 59 color-coded disks with tutors, quizzes, tests, corrective feedback, comprehensive record keeping, and an extensive reporting system. Fifty-one of the disks contain lessons in vocabulary, reading comprehension, mathematics, and language expression. (The other eight disks are for instructional management and record keeping.)

TRAINING: Tutorial for training is included with the courseware.

COSTS: The complete package is approximately $940. Schools receive a 20% discount.

DISTRIBUTOR: C.E.O. Software Solutions
205 Main Street
Matawan, New Jersey 07747
(201) 566-4545

[or]

Softwriters, Inc.
4718 Harford Road
Baltimore, Maryland 21214
(800) 451-5726

* Included in HSPT Resource Guide: Reading/Writing

\+ Available for review at ETTCs

CONTACTS IN NEW JERSEY USING Skills Bank:

John Arendas, Microcomputer Manager — Bergen County
Bergen County Vocational & Technical High School
200 Hackensack Avenue
Hackensack, NJ 07601
(201) 343-6000

Elinor French, Supervisor of Basic Skills — Middlesex County
Middlesex County Vocational & Technical High Schools
112 Rues Lane
East Brunswick, NJ 08816
(201) 257-3300 x45

Kathy Grimaldi, English Department — Middlesex County
Old Bridge Township Public Schools
Cedar Ridge High School
Route #516
Old Bridge, NJ 08857
(201) 566-1000

Patricia Hess, District Computer Specialist — Monmouth County
Keansburg Borough Public Schools
69 Church Street
Keansburg, NJ 07734
(201) 787-7578

TITLE: **The Spelling System *+**
by Milliken Publishing Company

PURPOSE: To teach the major principles and patterns that occur in spelling of English words.

HARDWARE: Apple II family, disk drive, and printer (optional).

GRADE LEVELS: Four to eight.

DESCRIPTION: The program is designed to teach the major principles and patterns that occur in spelling. Many spelling irregularities are also taught. Format includes three separate exercises: tutorial, drill and practice, and mastery testing. The management program maintains records of all test scores.

Over 1,400 words are taught. New words can be added by the teacher. Games, puzzles, and other graphic practice formats are included. A reproducible activity book is available for supplementary exercises.

TRAINING: Teacher's guide provides training.

COSTS:

- The Spelling System package is approximately $150 (contains four disks, teacher's guide and reproducible masters book).
- The above package with four back-ups is approximately $225.
- Individual disks are approximately $40 each.
- Teacher's guide is approximately $10.
- Reproducible masters book is approximately $10.
- Volume discounts and reduced prices with site membership are available.

DISTRIBUTOR: Charles Eisenberger, Representative
Milliken Publishing Company
8 Grace Road
East Brunswick, New Jersey 08816
(201) 257-4115

* Included in HSPT Resource Guide: Writing

+ Available for review at ETTCs

[or]

Milliken Publishing Company
1100 Research Boulevard
P.O. Box 21579
St. Louis, MO 63132-0579
(314) 991-4220

CONTACTS IN NEW JERSEY USING The Spelling System:

Elizabeth Getlik, Resource Room Teacher — Bergen County
Waldwick Junior/Senior High School
Wyckoff Avenue
Waldwick, NJ 07463
(201) 652-9000

Jules DiSerafino, Principal — Hudson County
Kearny High School
336 Devon Street
Kearny, NJ 07032
(201) 955-5048

Patricia Hess, District Computer Specialist — Monmouth County
Keansburg Borough Public Schools
69 Church Street
Keansburg, NJ 07734
(201) 787-7578

Charles Murphy, Principal — Union County
Union Township Public Schools
Battle Hill Elementary School
Killiam Place
Union Twp., NJ 07083
(201) 688-1200

Replace this page with index for

Comprehensive Curricula Systems

Comprehensive Curricula Systems

Comprehensive curricula systems is the term used in this document for hardware/software systems that are generally minicomputer based. The hardware is combined with comprehensive curricula software packages and sophisticated student record management for multi-grade levels. The curriculum packages can be for many subject areas, but generally include at least mathematics, reading, and/or language arts. Many students, sometimes up to several hundred, can be linked together on the same system.

Generally, the comprehensive computer curricula system supplements rather than replaces material presented by the teacher or textbook while providing individual attention for students at a multitude of grade levels (Birkhead, 1985). The topics and skills on the system enhance the instructional program while providing a comprehensive student management and performance reporting system. These systems are becoming increasingly popular with educators because of a growing concern for accountability and remediation (Reinhold, 1986).

Each student using comprehensive curricula computer systems has the advantage of working at a level unique to his/her ability in a variety of subjects. Educators have the advantage of tracking the skills that each student is acquiring as he/she progresses through the programs. Studies indicate an improvement in overall achievement when a comprehensive system is used (Human Resources Research Organization (HumRRO), 1986; Dudley, 1983a; Gourgey, et al., 1984.)

This section will focus on complete curriculum packages that are comprehensive and feature sophisticated reporting systems. Following is a representative sampling of these comprehensive curricula systems.

TITLE: **Dolphin (R) Curricula**
by Houghton Mifflin Co.

HARDWARE: The Digital MICRO/PDP-11™ links up to 14 student stations and a printer. Dolphin Curricula also can run on Digital PDP-11 minicomputer series with Digital Equipment Corporation terminals and a printer.

GRADE LEVELS: Elementary.

DESCRIPTION: Dolphin has elementary grade level programs that advance students through increasingly difficult areas of mathematics computation and problem solving, language arts, and reading for a total of approximately 1,400 basic academic skills. The programs support classroom instruction and maintain teacher involvement in the structuring of individualized student programs.

The mathematics computation program is for instructional levels one through eight in the skills areas of whole numbers, fractions, decimals, percents, rates, ratios, and proportions. The mathematics problem-solving curriculum features a four-step problem-solving strategy used to guide the student through various types of word problems for whole numbers, fractions, decimals, geometry, percents, rates, and proportions.

The language arts program reinforces grammar, usage, and mechanics for instructional levels three through eight and may be designed to complement current classroom assignments. The reading curriculum supports the instructional model of any basal reading program by reinforcing word attack, reading comprehension, vocabulary, and study skills for levels three through eight.

The management features include surveying of students' skill competencies, prescribing appropriate individualized activities, and reporting on students' progress and instructional status in the skill areas. The reports have diagnostic capabilities for analyzing specific skill strengths and weaknesses. There are thirteen reporting options available for planning instructional activities and reporting academic progress to students, teachers, administrators, and parents.

(R) Dolphin is a registered trademark.

TM Digital and MICRO/PDP are registered trademarks of Digital Equipment Corporation.

TRAINING: Teacher training and support service are provided by Houghton Mifflin, Educational Software Division, as part of software license.

COSTS: Houghton Mifflin has a variety of purchase and licensing plans. $9,500 is the approximate charge for the first year curricula license. After the initial year, the license is approximately $6,500 for annual renewal. Dolphin Curricula also can be purchased. A multiple-purchase discount is available. Hardware is purchased from Digital Equipment Corporation.

DISTRIBUTOR: Mel Riesel
Houghton Mifflin Company
Educational Software Division
2700 Henry Hudson Parkway #165
Riverdale, NY 10463
(212) 796-3782

[or]

Houghton Mifflin Company
Educational Software Division
125 East Lake Street
Suite 304
Bloomingdale, IL 60108
(312) 980-9710

TITLE: **Education Systems Corporation (ESC) Learning System ****
(formerly entitled Education Systems Technology Corporation - ESTC)

by Education Systems Corporation

HARDWARE: System operates on Tandy-based computer laboratory composed of one Tandy 3000 host computer and up to 40 Tandy 1000 personal computer student workstations. Special features of each workstation include speech compatible headset, mouse, and color monitor. Computers can also operate as stand-alones. HP Laser Jet printer is recommended for management reports. Network accepts MS DOS compatibles which include IBM PC, IBM PC jr., AT&T, and others.

System also operates on Apple II GS with the same special features listed above. (Contact ESC for details.)

GRADE LEVELS: Currently available for students from kindergarten to sixth grade. (The system is being expanded to include seventh and eighth grade.)

DESCRIPTION: Currently, there are 1500 lessons in math and reading basic skills featuring graphics and musical effects. Each lesson takes approximately 20 minutes to complete. Additional (third party) software programs can be added to the system if they are designed to integrate with the ESC management system. The software is copied onto the central hard disk, then the programs are added to the students' daily schedule. (Tandy and ESC provide the exact specifications.)

The math and reading skills have been correlated to the California Achievement Test and Iowa Test of Basic Skills. The basal reading and math series of nine educational publishers have also been correlated to this system.

The central hard disk stores information on each student's progress. The host computer loads the student lessons, manages the student and curriculum database, and generates the student, teacher, and parent reports. Diagnostic pre- and post-tests are not yet available on the system, but are being developed. Also under development are writing, language arts, and science curricula.

TRAINING: ESC trains and provides a lab attendant who schedules, manages, and supports all components of the system.

** Correlated to California Achievement Test and Iowa Test of Basic Skills

COSTS: ESC leases the software and related materials. As part of this lease, ESC supplies a lab attendant to manage the system on a daily basis. A three-year lease on software for 32 workstations and a lab attendant costs approximately $29,000 annually (fully paid after four years).

The hardware is purchased for approximately $80,000.

DISTRIBUTOR: Donald Wallick, Regional Educational Coordinator
Tandy Corporation/Radio Shack
Route 130 and Cinnaminson Avenue
Cinnaminson, New Jersey 08077
(609) 829-6911

[or]

James Brewington, Account Manager
Education System Corporation
20 Mayfair Court
Freeport, New York 11520
(516) 623-3908

[or]

Education System Corporation
5320 Carroll Canyon Road
San Diego, California 92121
(619) 587-0087

TITLE: **Microhost Instructional System ****
by Computer Curriculum Corporation (CCC)

HARDWARE: 16-bit multiple-processor computer expandable to four megabytes. Hard disk storage expandable to one gigabyte. CCC computers link to Microhost. IBM PC, Apple IIe, Sony SMC-70 and Atari ST microcomputers can operate as terminals and can also function as stand-alone computers. Microhost can serve up to 128 terminals simultaneously. One printer serves every 16 terminals in standard configurations.

GRADE LEVELS: One to adult levels of education.

DESCRIPTION: The Microhost Instructional System is an individualized learning system for elementary through adult students. Curriculum includes mathematics, reading, language arts, English as a Second Language (ESL), computer literacy, and programming. There are over 2000 hours of basic skills courses. Individualized worksheets may be generated for each of the courses based on each student's profile. Optional courseware is available for higher level SAT preparation in verbal, mathematics, biology, and chemistry.

CCC has correlated the computer-assisted instruction in this system to skill development needed in reading and mathematics for the High School Proficiency Test. This correlation is done for primary, intermediate, and ninth-grade skill levels.

Choices are offered in course pacing and content selection. Each student taking a course in a specific skill area works on the level unique to his or her ability. Some courses are organized by strands, which are sequences of graduated exercises in each skill area. As a student's performance improves in a strand, the computer will increase the difficulty of exercises in that strand. The balance of the curriculum is lesson-oriented, with tutorial reinforcement and/or branching when appropriate.

There is centralized instructional management with automatic record keeping. At any time, the printed reports are provided that show student status and progress. These reports show ability level by skill and course, group student by weaknesses, and/or track individual and group progress. The Microhost computer continually updates its records of each student's performance so that each session matches the student's current level of achievement.

** Correlated to the High School Proficiency Test.

TRAINING: On-site training is provided by CCC for teachers, computer laboratory manager, and building and district administrators. An awareness workshop is given by CCC for the community.

COSTS: Initial purchasing price is approximately $30,000 for hardware equipment that includes nine student learning stations, as well as software and the licensing agreement. Maintenance contract is negotiable. Annual licensing is about $400 per terminal for all CCC courseware and management including new releases or updating. Hardware equipment may be leased.

DISTRIBUTOR: Mr. George J. Auger, Vice President
Instructional Systems, Inc.
Continental Plaza III
433 Hackensack Avenue
Hackensack, New Jersey 07601
(201) 343-1800

[or]

Computer Curriculum Corporation
Corporate Headquarters
1070 Arastradero Road
P.O. Box 10080
Palo Alto, California 94304
(800) 227-8324

CONTACTS IN NEW JERSEY USING Microhost Instructional System:

(Due to space limitations, not all could be listed).

Jerome Benigno, Superintendent — Bergen County
Garfield Public Schools
125 Outwater Lane
Garfield, NJ 07026
(201) 340-5006

Richard M. Strauss, Superintendent — Cape May County
Lower Cape May Regional
687 Route 9
Cape May, NJ 08204
(609) 884-3475

Mario DiMaggio, Principal — Essex County
Belleville Middle School
279 Washington Avenue
Belleville, NJ 07109
(201) 450-3532

Angela Caruso, Director of Computer Education & Technology — Essex County
Newark Public Schools
Newark Board of Education
2 Cedar Street
Newark, NJ 07102
(201) 733-5677

Jules DiSerafino, Principal — Hudson County
Kearny High School
336 Devon Street
Kearny, NJ 07032
(201) 955-5048

Robert Darden, Director of Basic Skills — Middlesex County
New Brunswick Public Schools
24 Bayard Street
New Brunswick, NJ 08901
(201) 745-5416

Steven Fazekas, Superintendent — Monmouth County
Freehold Borough Schools
280 Park Avenue
Freehold, NJ 07728
(201) 462-0450

Richard Springer, Computer Education Coordinator — Monmouth County
Neptune Township Public Schools
2106 Bangs Avenue
Neptune, NJ 07753
(201) 776-2020

James D. Murphy, Assistant Superintendent — Ocean County
Brick Township Schools
101 Hendrickson Avenue
Brick Town, NJ 08724
(201) 477-2800

Joseph Dziezawiec, District Test Coordinator — Passaic County
Passaic County Technical-Vocational High School
45 Reinhardt Road
Wayne, NJ 07470
(201) 790-6000

Barbara Adams, Computer Coordinator — Salem County
Penns Grove High School
Harding Highway - Route 48
Carneys Point, NJ 08069
(609) 299-6300

John Taylor, Principal — Somerset County
Bernardsville Elementary School
Seney Drive
Bernardsville, NJ 07924
(201) 766-3240

Guy Barbato, Assistant Superintendent — Union County
Union Township Public Schools
2369 Morris Avenue
Union Township, NJ 07083
(201) 688-1200

TITLE: **WICAT System 300** and **System 1250**
by WICAT

HARDWARE: The System 300 is a minicomputer with hard disk storage that can connect up to 30 WICAT terminals or microcomputers, such as the Apple II family, IBM PC or IBM PC, jr., (with microadaptor linking micros to mini available through WICAT). Micros can also function as stand-alone computers.

The System 1250 networks microcomputers (up to eight with audio; 16 without audio) to a hard disk and IBM PC AT system manager (file server). Micros can also function as stand-alone computers.

Both systems use a monochrome video display and simulations are animated.

GRADE LEVELS: Kindergarten to grade twelve.

DESCRIPTION: The System 300 and System 1250 run WICAT-developed comprehensive courseware for reading, writing, language arts, math, and related topics. Courses are also available for French, English as a Second Language (ESL), typing, computer literacy, basic skills testing, and several ability (cognitive skills) tests. This self-paced system has a total of 21 curriculum packages in the system that can be run concurrently. Teachers have options in choosing and sequencing lessons. Natural sounding audio (speech synthesis), graphics, and animation are special features.

Both systems also run an administrative package which does record keeping, objectives-mastery tracking, attendance, scheduling, and grade reporting.

Computer management features are built in that determine student's initial ability, track progress, and require skill mastery before student is able to move to next level. The system will print reports of student progress. Teacher can choose and sequence lessons, or system will place each student in next appropriate computer-assisted instruction lesson.

A new feature of the system is a "Test Creation Package". The package allows educators to choose from given instructional objectives, and a test based on these objectives will be generated. After the student completes the test (on the computer or in paper-and-pencil form), the system prescribes the lessons that develop the skills identified as deficient by the test. This feature is very useful for developing the skills needed for the High School Proficiency Test and other standardized tests administered annually in New Jersey.

TRAINING: As part of the annual license, one week of training is provided for the laboratory manager who is responsible for the system. Three days of training are provided for the teachers who will use the system.

COSTS: Price of hardware ranges from a low of $29,950 for the System 1250 (eight terminals with audio) to a high of $98,950 for the System 300 (30 terminals with audio). Courseware is acquired through an annual license at a base package cost of $300 per work station.

DISTRIBUTOR: Dr. William J. Genova
WICAT New York Area Manager
98 Dogwood Drive
Easton, Connecticut 06612
(203) 374-6773

Replace this page with the index for

Networked Systems

Networked Systems

In computer technology, a network is usually defined as a system in which programs from a single disk drive are available to more than one microcomputer. A simple networked system consists of a number of microcomputers linked in "daisy chain" fashion by cables, with a floppy or hard disk drive sending the same program to all the connected machines.

Recent technological advances have resulted in networks that are far more sophisticated. These systems are powered by a hard disk drive connected by cables to each microcomputer. The hard disk has massive storage capacity, allows multiple users to access the same files, and enables each micro to access different programs simultaneously (Spain, 1984). A central "host" computer will monitor and supervise the activities of the various microcomputer stations. The central host computer is generally called a "file server".

Some networked systems are referred to as LAN (Local Area Network). A LAN is a networked system with a hard-wired connection between a variety of hardware, such as computers, hard disk drive, printers, plotters, modems, additional storage units, and peripherals (Melin, 1986). The devices may be in the same room, on different floors, or even across city blocks. Connections allow users on the LAN to share the capabilities of all the connected hardware from individual computer stations.

As of 1983, integrated learning courseware for multigrade levels was typically based on mainframes and minicomputers (Dudley, 1983a). At that time, such courseware required memory space not available on microcomputers. The development of hard disk drives, coupled with LAN technology, expands the capability of microcomputers and allows integrated learning courseware to be used on microcomputers. In addition, the lower costs of networks make them more cost-effective than mainframes and minicomputers and hence make integrated learning with computer-managed instruction more accessible.

One of the educational advantages of using a networked system is that teachers can assign individual courses to students and track individual progress from the host computer (file server). In addition, word processing and other productivity tools can be used on the individual microcomputers (referred to as stand-alones). These features permit broader use and more flexibility for microcomputers in school settings.

Currently, only a few integrated learning systems are developed specifically for networked systems; these are described on the following pages. Some software programs developed for stand-alone microcomputers have a network version. This is usually indicated in the publisher's description of the product with a notation such as "Network version available." (Using a software program in a networked system requires the negotiation of a site license agreement between the publisher and the school district.) For more information on available software for networked systems, refer to "Books and Periodicals" in Appendix A.

TITLE: **Advanced NetWare** and **IBM PC Classroom LAN Administration System**
by International Business Machines Corporation

HARDWARE: IBM family with a variety of configurations. The workstations in the system can be IBM PC or IBM PC jr. with either color or monochrome displays. The IBM PC/AT is the file/printer server, and the IBM PC/XT serves as the teacher workstation. Additional hardware includes the IBM Cluster Adapters, the IBM PC Network Adapters, or the IBM Token Ring Network Adapters with associated components for each. (Specific configurations are available from IBM.)

DESCRIPTION: For PC-based local area networks, IBM has two software products: (1) Advanced NetWare and (2) IBM PC Classroom LAN Administration System. These products assist administrators, teachers, and students in establishing and using an efficient classroom and/or school network.

(1) Advanced NetWare is a sophisticated network control operating system. Some of the major features include performance, security, ease of use, flexibility, and expandability. Advanced NetWare capitalizes on the wide range of DOS programs available for workstation personal computers on the network, but uses a non-DOS server to optimize network performance. It also allows a combination of the IBM PC Cluster, IBM PC Network, and IBM Token Ring Network to be interconnected. Workstations from one network can communicate to workstations and servers attached to other networks. Remote workstations are also supported by Advanced NetWare allowing homebound students access to the system.

(2) The IBM PC Classroom LAN Administration System is a network management program developed specifically for the school environment. It is used with Advanced NetWare and automatically invokes the features of that software.

In addition, the PC/Class simplifies the daily operation of the LAN for teachers and students by providing a predefined menu creation utility, a timing component for the system that can be correlated to the school schedule, and data maintenance for student progress, courseware usage, and courseware assignment. The courseware assignment feature allows a teacher to grant access to individuals or an entire class. Courseware usage is maintained so that a teacher knows which programs have been used by each student and for how long. Progress data and bookmarks are provided for the IBM "Basic Skill Series" products. Reports can be printed for evaluation and consultation.

The IBM PC Classroom LAN Administration System is designed to simplify network installation and to assist teachers in using

the network. The menu-driven programs make it easier for a teacher to enroll students, define classes, and assign courseware with minimal training.

The following is a list of the IBM courseware that run under Advanced NetWare and the IBM PC Classroom LAN Administration System.

IBM Advanced Math Series
    Geometry Series
IBM Basic Skills Series
    Combining Sentences Series
    Math Concepts Series
    Math Practice Series
    Parts of Speech Series
    Punctuation Series
    Reading for Information Series
    Reading for Meaning Series
    Spelling Series
    Touch Typing for Beginners
    Vocabulary Series
IBM Biology Series Version 1.1
Bouncy Bee Learns Letters
Bouncy Bee Learns Words
DPEdit
Displaywrite 3
DOS 2.1 and higher
IBM Earth Science Series Version 1.1
Electric Desk - PC Version (IBM Vendor Logo)
Electric Desk - PCjr Cartridge Version (IBM Vendor Logo)
Electric Poet
Introduction to General Chemistry Series (IBM Vendor Logo)
Listen to Learn
Logo
Logo Learner
Lotus 1-2-3 (IBM Vendor Logo)
Macro Assembler Versions 1.0 and 2.0
Missing Letters
Pascal Compiler Versions 1.0 and 2.0
PC Picture Graphics
PC Storyboard
Personal Communications Manager
Personal Editor Versions 1.0 and 2.0
IBM Physics Discovery Series
IBM PILOT
Primary Editor
Private Tutor Version 2.0
Private Tutor Language Arts Series
Private Tutor Math Series
Professional Debug

Professional Editor
Super Calc3 (IBM Vendor Logo)
Teacher's Quiz Designer
Writing to Read Version 3.0

NOTE: Many non-IBM courseware and software offerings run under Advanced NetWare and IBM PC Classroom LAN Administration System, as well.

TRAINING: IBM provides in-service training and training through the IBM Technical Coordinator Program.

COSTS: Advanced NetWare software is approximately $1100 to $1800, depending on which of the three versions are chosen. IBM PC Classroom LAN Administration System software is approximately $700. Hardware costs are dependent on system configurations. A system with 30 student workstations and all hardware components can range from approximately $48,000 to $76,000. IBM provides individual cost proposals.

DISTRIBUTOR: IBM Education Branch
Atrium One-1000 Atrium Way
Mount Laurel, New Jersey 08054
(609) 866-5400

[or]

IBM Education Branch
600 Parsippany Road
Parsippany, New Jersey 07054
(201) 386-5600

CONTACTS IN NEW JERSEY USING Advanced NetWare AND IBM PC Classroom Lan Administration System:

Carolyn Paterson, Vice Principal — Atlantic County
Atlantic City School District
Atlantic City High School
3701 Atlantic Avenue
Atlantic City, New Jersey 08401
(609) 344-4453

Richard C. Hollinshead, Director of Instruction — Camden County
Black Horse Pike Regional School District
1405 Chews Landing Road
Laurel Springs, New Jersey 08021
(609) 227-4106

Robert Rapp, Business & Marketing Supervisor
Toms River Regional School District
Toms River High School East
Dunedin Street
Toms River, New Jersey 08753
(201) 341-9200 x510

Ocean County

TITLE: **Basic Skills Remediation Curricula**
by Computer Systems Research, Inc. (CSR)

HARDWARE: IBM PC with 256K (student stations) and IBM PC/AT with 640K (file server), and appropriate network hardware with the IBM Novell Advanced NetWare software.

DESCRIPTION: Grade levels range from primary to adult education, with 285 comprehensive modules for basic skills and complete reports of student progress. The curriculum content includes language arts, reading, and mathematics. The original course modules were based on competencies identified on the Florida Statewide Item Assessment Program Specifications. The courseware can be customized to meet the needs of students for specific performance standardized tests and for HSPT skill development.

The courseware is presented, modified, and tracked utilizing the software CSR Trainer 4000 Personal Computer Instructional System. The individualized program for each student is determined by a comprehensive initial test given when a student first begins on the system. This initial test automatically generates reports for individual student diagnosis and prescription.

The system operates through the host computer or file server which houses the courses. Students access the courses at student stations by typing a student number. The file server sends the teacher-prescribed or system-prescribed course to the student station. A ten-question pretest diagnoses the student's mastery of each skill. If the student does not pass the pretest, a tutorial is presented and a posttest follows. If the posttest score indicates non-mastery, the student repeats the course. After two failures, the student receives the next course in the sequence and repeats the failed course (for the third time) after completing the "new" course. When a course is completed, the student's score is recorded in the file server.

Management components include diagnosis and prescription, as well as the recording and tracking of vital information. The teacher may check or update the records at any time. A summary report on each student will show guessing attempts. Reports are generated for students, teachers, administrators, and parents.

TRAINING: Inservice training provided by Computer Systems Research, Inc.

COSTS: Price is dependent on system configurations, but is approximately $78 per module on a site licensing basis. The complete set of 285 courses is approximately $16,500 for one lab. For two or more labs, the cost is approximately $61 per

module and $13,000 for a complete set of courses. Installation and training are about $1,600.

DISTRIBUTOR: Frederick M. Tracy
Computer Systems Research, Inc.
Avon Park South
P.O. Box 45
Avon, Connecticut 06601
(800) 922-1190

TITLE: **Integrated Classroom Learning System**
by Ideal Learning

HARDWARE: Apple II family and IBM computers connected to Corvus hard disk with Omninet network. Up to 63 computers can be connected to one hard disk system.

DESCRIPTION: The Integrated Classroom Learning System offers courses that are comprehensive programs with unit tests and student worksheets developed around a complete list of objectives. Some of the courses currently available are:

HSPT Math	HSPT Reading	Calculus
Math 1-8	Language Arts 3-8	Physics
Problem Solving 3-6	Elementary Reading	Chemistry
Algebra I & II	Secondary Reading	Biology
Geometry		Spanish I & II

The system allows other (third party) software to be incorporated into the system. Courseware can also be customized to meet specific district needs.

Management features include monitoring individual student progress, on-going analysis, immediate scoring and printing of test results, and mastery information provided by objective for each student, selected group, or all students.

TRAINING: In-service training and implementation instruction provided by CEO Software Solutions.

COSTS: Cost is dependent on the number of courses purchased and the number of computers connected to the hard disk. The Corvus hard disk costs approximately $3500. Interface cards for each computer in the network are about $170 each. The price of each course is about $1800, depending on the number of courses purchased. Management capabilities can be purchased for a one-time cost of approximately $3000.

Individual cost proposals are provided by CEO Software Solutions based on district requirements.

DISTRIBUTOR: C.E.O. Software Solutions
205 Main Street
Matawan, New Jersey 07747
(201) 566-4545

[or]

Ideal Learning, Inc.
327 S. Marshall Road, Suite 200
Shakopee, Minnesota 55379
(612) 445-2690

CONTACTS IN NEW JERSEY USING Integrated Classroom Learning System:

John Arendas, Microcomputer Manager — Bergen County
Bergen County Vocational & Technical High School
200 Hackensack Avenue
Hackensack, NJ 07601
(201) 343-6000

Harold Jones, Director of Funded Programs — Bergen County
Englewood Public Schools
12 Tenafly Road
Englewood, NJ 07631
(201) 833-6192

Loy Ehlers, Superintendent — Cape May County
Cape May Special Services School District
Crest Haven Road
Cape May Court House, NJ 08210
(609) 465-2720

Richard Mayan, Assistant Principal — Gloucester County
West Deptford High School
Old Crown Point Road
Westville, NJ 08093
(609) 848-6110

Peter Walling, District Supervisor of Computer Education — Mercer County
Trenton Public School District
108 North Clinton Avenue
Trenton, NJ 08609
(609) 989-2899

George Zupko, Assistant Superintendent — Middlesex County
Perth Amboy Public School District
178 Barracks Street
Perth Amboy, NJ 08861
(201) 826-3361

Salvatore Principle — Monmouth County
Keyport High School
Broad Street
Keyport, NJ 07735
(201) 264-0902

Fred Lockenmeyer, Assistant Superintendent — Monmouth County
Manasquan Public Schools
Broad Street
Manasquan, NJ 08736
(201) 528-8801

TITLE: **Local Plato Delivery System (LPDS)**
by Control Data Corporation

HARDWARE: Local PLATO Delivery System (LPDS) uses IBM PCs or compatibles as workstations in a local area network. Fifteen or 30 terminals are networked, and the workstations are linked to host IBM PC/AT system manager (file server) where the PLATO courseware is stored on hard disk. In addition, the system has the ability to link a maximum of four workstations in remote locations to the system manager with phone modems, which permits computer access at locations removed from the central computer room. The IBM PCs can also function as stand-alone computers.

DESCRIPTION: LPDS uses PLATO-developed courseware in two packages.

(1) Advanced Math and Science Package is for grades 8-12. Courses are available for physics, chemistry, algebra, precalculus, calculus, structured Fortran and Pascal.

(2) Remediation Package is for grades 3-12. Math and reading courseware is offered for grades 3-8. The grades 9-12 section includes basic skill development for math, reading, writing, science, social studies, life coping skills, and algebra.

Computer management instruction (CMI) is part of both packages. CMI is built in and determines student's initial ability, tracks progress, and requires skill mastery before moving to next level. Teacher can choose and sequence lessons.

Also available is an administrative package which does record keeping, objectives-mastery tracking, attendance, scheduling, and grade reporting.

TRAINING: Laboratory manager and teacher training are part of service.

COSTS: The cost is $59,500 for the 15 (diskless) terminal network or $114,000 for the 30 (dual disk) terminal network. Price reductions are available if the school uses its own microcomputers. The cost of courseware is $300 annually per workstation for one package or $450 per workstation if both packages are leased.

DISTRIBUTOR: Dennis Eickhorn
Control Data Corporation
6003 Executive Boulevard
Rockville, Maryland 20852
(301) 468-8290

TITLE: **New Century Instructional/HSPT Center**
by New Century Education Corporation

HARDWARE: The system consists of three types of modules.

(1) Teacher Administrative Module - containing two microcomputers, floppy disk and 30 megabyte hard disk drives, uninterrupted power supply unit, monitor, and printer within a specially designed cabinet.

(2) Skills Acquisition Module - a network of micro units linked to the micro-processor. Each unit contains an IBM-compatible 256K Zenith microcomputer, synchronized Audio Frame System Unit for natural speech delivery of instruction, disk drives, and color monitor within specially designed cabinets.

DESCRIPTION: New Century Instructional/HSPT Center consists of individualized, multi-media learning centers for 10-30 students per class period -- including equipment, management system, and complete curriculum. Students can be placed on a special HSPT track, with diagnosis and instruction correlated to the exam. The curriculum includes reading/language arts, mathematics, and reasoning/thinking skills. Audio instruction and computer and printed lessons are all part of the learning experience.

When a student is assigned to the center, a diagnostic test is administered to determine initial placement and to generate an individualized instructional plan, which includes an estimated number of instructional days required. The student follows the sequence of skills determined by the diagnostic testing. Evaluation is on-going through mastery tests designed to determine progress toward the goal of successfully passing the HSPT. After completing the instructional sequence, the student then proceeds to the computer-administered New Century Simulated NJHSPT, which is scored immediately. For those still requiring additional help, an intensive instructional path is generated by the system.

The management system for the center tracks progress and provides a variety of reports. Reports include records of diagnosis, placement, lesson performance, mastery tests, and HSPT performance projections. The information can be accessed on-screen or printed out for administrators, classroom teachers, students, and parents.

TRAINING: Included with system purchase.

COSTS: Purchase price is approximately $60,000 for a complete center consisting of the teacher's module, management system, ten

student stations, network, curriculum materials, installation, training, and on-going consultant and maintenance services. Renewal for subsequent years is approximately $9,000. The renewal fee includes continuation of on-going services, replacement materials, and all revisions and new releases for management and curriculum.

DISTRIBUTOR: New Century Education Corporation
220 Old New Brunswick Road
Piscataway, NJ 08854
(201) 981-0820

CONTACTS IN NEW JERSEY USING New Century Instructional/HSPT Center:

Anthony Blanco, Superintendent — Bergen County
North Arlington Public Schools
222 Ridge Road
North Arlington, New Jersey 07032
(201) 991-6800

Gary Gray, Principal — Mercer County
Hamilton Township Public Schools
The G.E. Wilson School
600 East Park Avenue
Trenton, New Jersey 08610
(609) 890-3786

Mr. Joseph Valenti, Assistant Principal — Middlesex County
South Brunswick High School
Major Road
Monmouth Junction, New Jersey 08852
(201) 329-4044

Replace this page with index for

Database Software

Database Software

A database collects information which can be accessed and manipulated to produce reports in the format needed by the user. A database, like an electronic file cabinet, holds a large amount of data divided into smaller and more narrowly defined collections of information called files. The files contain particular entries called records or forms. Within the records are particular entries called fields, items, or categories. These fields can contain such elements as name, grade, age, homeroom teacher, etc. The fields provide the means of collecting, comparing, selecting, and sorting the data (Durr & Walker, 1985).

Although some database software programs have predetermined fields for specific purposes, other databases are empty shells with which users may create formats, files, records, and fields. Some examples of such general purpose database programs are PFS File, File Master, dBase II & III, and DB Master. Appleworks and Lotus 1-2-3 are examples of integrated software that have a database component. Because they are not specifically configured for computer-managed instruction, general purpose database programs are not described in the annotated bibliography.

A computerized database allows the user to store, search, retrieve, update, and print data. The software performs the task after the user has entered the data. In schools, a database can be used for such diverse administrative duties as student record keeping, attendance, report cards, rank order, schedules, inventories, and curriculum management (Cheever et al., 1986). This section of the document lists database software that is useful instructional management in the monitoring of student skill development.

TITLE: **California Achievement Test (CAT) Reports and Test of Cognitive Skills (TCS) Reports**
by Ridgewood MIS Department, Ridgewood Public Schools.

PURPOSE: This database provides teachers and administrators with an analysis of student performance on CAT and TCS.

HARDWARE: IBM System 36 minicomputer with an IBM PC and plotter for the graphics reports.

DESCRIPTION: After students have been administered the CAT and TCS, the tests are scored by McGraw-Hill, and the results are entered on cards providing four records for each individual test: (1) Scale Score, (2) National Percentile, (3) Local Percentile, and (4) Normal Curve Equivalent Score (NCE). A local company takes the information on the cards and puts the data on 8" disks. This information is developed into reports on the district's System 36 minicomputer. The process is being revised during the 1987-88 school year to allow for local scoring and/or downloading of files from McGraw-Hill.

The range of reports includes initial (September) and final (June) CAT and TCS reports at the classroom, building, and district levels. In addition, graphic summary reports are available for both the CAT and TCS at the building and district levels.

TRAINING: Half-day training session is recommended.

COSTS: Negotiable.

DISTRIBUTOR: Ridgewood Public Schools
Dr. Richard Langheim
Executive Director/MIS
Education Center
49 Cottage Place
Ridgewood, New Jersey 07451
(201) 670-2679

TITLE: **Class II (Classroom Learning And Scoring System) with Testbank**

(Note: either can be used separately, but both work best when used together.)

by Holt, Rinehart and Winston, Inc.

PURPOSE: CLASS II is an automated system designed to help manage, monitor, and evaluate student progress in instructional programs.

TESTBANK is a separate program that provides a variety of test-building options for instructional programs.

HARDWARE: Apple IIe with 80-column display, two disk drives, and printer. Also available for IBM PC. An automatic card reader, such as Chatsworth 1000, NCS Sentry, or Scan-tron, is highly recommended, but optional.

DESCRIPTION: CLASS II is a learning/scoring management system that can administer and score tests; analyze the results; obtain clear, concise reports of student progress; and provide learner prescriptions. The management system also provides summary reports of student performance at school and district levels for monitoring instructional programs.

Customized tests are created by TESTBANK. The software is coded to evaluate specific learning objectives. Therefore, it can evaluate the skill development of individual students needed for the HSPT and other standardized tests.

CLASS II is most effective when used in conjunction with TESTBANK. CLASS II tests, scores, prints out management reports, and prescribes additional work for students who fail to master the pre-determined objectives. TESTBANK automatically generates individualized further tests for each student based only on non-mastered objectives. CLASS II will then automatically update students' files. This process can continue till student has mastered the objective(s).

TRAINING: Both systems are user-friendly with additional support provided by producer as needed. Also, training is available on a district-wide basis through Holt, Rinehart and Winston, Inc.

COSTS: CLASS II and TESTBANK can be purchased together for approximately $1500. Special arrangements are available if several districts purchase together. For example, if five districts jointly purchase the programs, Holt, Rinehart and Winston will correlate the programs in one subject area for them.

DISTRIBUTOR: Dr. Gerald Bloch
National Director of New Technology
Holt, Rinehart and Winston, Inc.
41 Madison Avenue
New York, New York 10017
(212) 872-2228

CONTACTS IN NEW JERSEY USING Class II:

Catherine Hills, Elementary Curriculum Supervisor — Gloucester County
Washington Township Public Schools
Box 286 - RD #3
Sewell, NJ 08080
(609) 589-9135

TITLE: **Curriculum Management System (CMS)**
by Random House, Inc.

PURPOSE: This database program allows school or district to enter information needed to manage curriculum.

HARDWARE: Apple II family or IBM-PC with two disk drives or hard disk drive and printer. Optical mark reading equipment (card reader) is optional. For the TRS-80 Model III or 4 with two disk drives, a similar version of the program, Customized Instructional Management System (CIMS), is available.

DESCRIPTION: This program is a generic system that allows the user to customize and computerize the management of curriculum for the student population of a school or district. It enables the teacher to track the progress of students through an indefinite number of objectives and to enter and list objective prescriptions for individual students. The teacher has the option of setting the same mastery level for all objectives or specific mastery levels for individual objectives. Test scoring is done by keyboard entry or card reader scoring. The computer scores, records, updates, and stores student performances. The system also generates instructional prescriptions based on mastery of these objectives.

Report printouts are provided on testing results for individual, class, and schools. Reports may contain any or all of the following data: status, percentage score, last date the test was taken, and the first date the objective was attempted. Reporting features include identifying special instructional need groups, overall progress reports, or continuous assessment of student progress. Personal or standard messages can be included with the data.

TRAINING: Step-by-step instructions are given in the manual and on demonstration disk.

COSTS: Pricing begins at approximately $750 for the CMS Basic Program. The CMS Administrative Package and the CMS Card Reader Software are approximately $75 each.

DISTRIBUTOR: Mr. Patrick J. Ricci
Random House, Inc.
104 Summit Court
Lakewood, New Jersey 08701
(201) 364-0246

[or]

Random House, Inc.
201 East 50 Street
New York, New York 10022
(212) 751-2600 or (800) 638-6460 x 2354

TITLE: **Curriculum Manager**
by Corporation for Public Information in Education

PURPOSE: This instructional management system allows educators to establish and monitor individual student curriculum goals.

HARDWARE: APPLE II family, disk drive, and printer.

DESCRIPTION: Curriculum manager permits teachers to set individual student curriculum goals and monitor progress on a daily, weekly, and/or monthly basis. The student's progress can be monitored in any two textbook series using either pages or instructional units. Class reports include student name, attendance, curriculum test accuracy, current placement, daily progress, and teacher-selected, year-end curriculum goals. Building level summaries and parent reports are also available.

TRAINING: Instruction manuals are included with software.

COSTS: Approximately $200.

DISTRIBUTOR: Corporation for Public Information in Education
1714 Illinois
Lawrence, Kansas 66044
(913) 841-3095

TITLE: **HSPT Reports**
by Ridgewood MIS Department, Ridgewood Public Schools

PURPOSE: This database provides teachers and administrators with an analysis of student performance on HSPT.

HARDWARE: IBM System 36 minicomputer

DESCRIPTION: There are two versions of the programs. The first version provides a report based on a practice HSPT. The second version provides a report based on the actual HSPT. In both versions, individual profiles are produced for sections (reading, writing, and/or mathematics) and clusters. These reports are customized as defined by teachers and/or administrators. Reports include classroom level detail reports and school level summary reports.

TRAINING: Half-day training session recommended.

COSTS: Negotiable.

DISTRIBUTOR: Ridgewood Public Schools - Education Center
Dr. Richard Langheim,
Executive Director/MIS
49 Cottage Place
Ridgewood, New Jersey 07451
(201) 670-2679

TITLE: **Instructional Management System Plus (IMS+)**
by National Computer Systems

PURPOSE: IMS+ processes information for instructional management and generates individual and group student profiles based on assessment data.

HARDWARE: IBM PC/PC-XT computer with 256K, hard disk drive, optical mark reader, and printer.

DESCRIPTION: Instructional Management System Plus (IMS+) is generic software that can be customized by National Computer Systems to process given information for instructional management. The software includes student database, report writer, and criterion referenced test scoring utilities. The database on individual students provides 32 biographic and demographic elements, 20 additional user-defined student data elements, and four listings with varying levels of detail.

The curriculum management software accommodates curriculum structure of up to five levels for 24 subject areas. The user determines learning outcomes and criteria for mastery for use in referenced test scoring. Curriculum data stored in the database include objectives, test answer keys, inventory of instructional resources, and correlation of resources to specific objectives.

The IMS+ software scores criterion referenced tests and produces a wide variety of instructional management reports including individual results, profiles, and history; group student profiles; classroom summaries; parent reports; and item analysis. The system produces ten standard reports with dozens of user options. The system collects data using the optical mark reader. The information is read by the card reader and processed/stored by the computer. Reports, generated for teachers, administrators, and/or parents, are used to monitor progress and to determine the instructional needs of students.

TRAINING: Three days of training at the customer's site is recommended (approximately $2000).

COSTS: The program costs approximately $3000 for the software and about $2000 for training.

DISTRIBUTOR: Lynn Neiverth
National Computer Systems
39 Henry Street
Succasunna, New Jersey 07876
(201) 584-8016

[or]

Jack Cohen
National Computer Systems
411 Valley Road
Melrose Park, PA 19126
(215) 635-5180

[or]

National Computer Systems
P.O. Box 9365
Minneapolis, Minnesota 55440-9990
(800) 447-3269

CONTACT IN NEW JERSEY USING IMS+:

Angela Caruso, Director of Computer Education & Technology Essex County
Newark Board of Education
2 Cedar Street
Newark, NJ 07102
(201) 733-5677

TITLE: **MMICRO ****
by Educational Development Corporation

PURPOSE: MMICRO provides comprehensive information on skill assessment for classroom use and administrative review.

HARDWARE: Apple II family or IBM PC with hard disk or two disk drives, and printer. Optical mark reader is optional, but recommended.

DESCRIPTION: Microcomputer Managed Information for Criterion Referenced Objectives (MMICRO) is a management system for instruction. Educators may write their own objectives or use the preloaded comprehensive criterion-referenced objectives for reading and math for grades one through nine. A special version has been developed by C.E.O. Software Solutions that tracks the skills contained on the High School Proficiency Test.

With the MMICRO program, a teacher may test, obtain a report, and begin instruction for the prescribed student needs on the same day. Reports are generated with class listings, diagnostic-prescriptive information for individual student needs, class profiles, instructional groupings, and records of student progress for parents, teachers, and school administrators. Time periods can be specified for the reports. Other features of the program include menu-driven format and the ability to modify and/or customize the diagnostic tests, as well as the objectives.

TRAINING: A two-day training session is recommended. Self-teaching is possible depending on level of computer proficiency.

COSTS: The program is approximately $1600. Training and special versions of the database (such as the HSPT version) are additional.

DISTRIBUTOR: C.E.O. Software Solutions
205 Main Street
Matawan, New Jersey 07747
(201) 566-6386

[or]

Educational Development Corporation
8141 E. 44 Street - P.O. Box 45663
Tulsa, Oklahoma 74145
(800) 331-4418

** Version correlated to HSPT available from CEO

CONTACTS IN NEW JERSEY USING MMICRO:

Michele Sinesky, Learning Consultant — Burlington County
New Hanover Township Public Schools
P.O. Box 276
Fort Dix Street
Wrightstown, NJ 08562
(609) 723-2139

Richard Mayan, Assistant Principal — Gloucester County
West Deptford High School
Old Crown Point Road
Westville, NJ 08093
(609) 848-6110

Owen Engler, Director of Secondary Education — Passaic County
Clifton Public Schools
745 Clifton Avenue
Box 2209
Clifton, NJ 07013
(201) 470-2269

Peter Chletsos, Basic Skills Coordinator/Supervisor — Sussex County
Hopatcong Public Schools
P.O. Box 1029
Windsor Avenue
Hopatcong, NJ 07843
(201) 398-5247

TITLE: **Network for Action in Microcomputer Education (N.A.M.E.) Project**
by Network for Action in Microcomputer Education

PURPOSE: This program, a computer-based management system used with students who have taken the HSPT, streamlines the establishment of mandated records for HSPT failures.

HARDWARE: Apple II family, disk drive, and printer.

DESCRIPTION: Network for Action in Microcomputer Education (N.A.M.E.) is a cooperative activity, voluntarily supported by school districts, that provides needed microcomputer support and technical assistance services. One project implemented by N.A.M.E. streamlines the monitoring of student proficiency for the HSPT. (Participation in this project is not predicated on N.A.M.E. membership.)

The following HSPT management materials are generated by this project: (1) printed documents containing an Individual Student Improvement Plan (ISIP) for each student failing a section of the HSPT; and (2) data disks that integrate with the Appleworks software program or in data interchange format. Other databases, such as Lotus 1-2-3 for IBM PC, will be incorporated into the project in the near future.

When a district participates, it submits a release form to permit data transmittal through N.A.M.E. N.A.M.E. holds all data obtained from the HSPT in strict confidence. The magnetic tape, documents printed from the tapes, and data disks are kept secure and released only to each district's authorized agent.

N.A.M.E. receives the participating district's HSPT data on magnetic tape from the HSPT grading contractor. The magnetic tape and the data it holds are used to generate and convey to the district the HSPT management materials for each student who has failed a section of the HSPT (reading, writing, and/or mathematics). The materials include a record of deficiencies and progress, a statement of skills not mastered, individual student labels for the ISIP file folder, a cover page for local data collection, and a data disk that integrates with Appleworks. The district can add or modify data on the disk to fit local needs and then print cover pages for ISIPs and instructional management.

TRAINING: Support is available through N.A.M.E.

COSTS: Price is determined by the number of students in the district not passing the reading, writing, or mathematics section of the HSPT. The approximate cost is $1 per student for each section not passed. (Maximum cost is $3 per student.)

DISTRIBUTOR: Network for Action in Microcomputer Education
Dr. Henry J. Petersen
Fallon Center
51 Clifford Drive
Wayne, New Jersey 07470
(201) 696-3157

CONTACTS IN NEW JERSEY USING N.A.M.E. Project:

(Due to space limitation, not all could be listed).

Dr. Richard Noonan, Director of Curriculum & Instruction — Bergen County
Glen Rock Public Schools
620 Harristown Road
Glen Rock, NJ 07452
(201) 445-7700

James Chapman, Vice Principal — Camden County
Pennsauken Township Public Schools
Hylton Road
Pennsauken, NJ 08110
(609) 662-8500

Susan Ginsberg, Computer Resource Teacher — Essex County
Irvington Township School District
1150 Springfield Avenue
Irvington, NJ 07111
(201) 399-6829

Mary Linden, Administrative Assistant/Testing Coordinator — Middlesex County
Piscataway Township Public Schools
Willow Avenue & Scott Street
Piscataway, NJ 08854
(201) 885-1670 x24

Janet Smith, Supervisor of Instruction — Monmouth County
Neptune Township Public Schools
2106 Bangs Avenue
Neptune, NJ 07753
(201) 776-2000

Dr. William Waters, Assistant Principal — Morris County
Morris Hills Regional High School
Main Street
Rockaway, NJ 07866
(201) 627-3500

Mrs. Judith Wilson, Curriculum Coordinator — Ocean County
Southern Regional High School District
75 Cedar Bridge Road
Manahawkin, NJ 08050
(609) 597-9481

Mary Jo Clegg, Basic Skills Coordinator — Passaic County
Wayne Township Public Schools
50 Nellis Drive
Wayne, NJ 07470
(201) 694-8600 x204

Fred Zimmerman or Patrick McGrath — Sussex County
Wallkill Valley Regional High School
Grumm Road
Hamburg, NJ 07419
(201) 827-4100

Muriel Thatcher, Computer Coordinator — Union County
Scotch Plains - Fanwood Schools
Evergreen & Cedar Avenues
Scotch Plains, NJ 07076
(201) 232-6161

TITLE: **Preliminary Scholastic Achievement Test (PSAT) Reports**
by Ridgewood MIS Department, Ridgewood Public Schools

PURPOSE: This database provides teachers and administrators with an analysis of student performance on PSAT.

HARDWARE: IBM System 36 minicomputer

DESCRIPTION: The data from PSAT are handled in-house once the scores have been received from Educational Testing Service. The PSAT analysis is developed in reading performance, verbal performance, reading comprehension, and math performance. Specific sections are analyzed with the following criteria: (1) items correct for all items in the cluster; (2) items correct for all items attempted; (3) percent of items attempted. This analysis is developed for each student on each skill area within each of the four general sections of the test. Class statistics, school statistics, and national statistics are generated for number of questions, number of students, mean, and standard deviation.

TRAINING: A half-day training session is recommended.

COSTS: Negotiable.

DISTRIBUTOR: Ridgewood Public Schools
Dr. Richard Langheim
Executive Director/MIS
Education Center
49 Cottage Place
Ridgewood, New Jersey 07451
(201) 670-2679

TITLE: **Project Basic III**
by Evans Newton Incorporated

PURPOSE: This program is designed to generate prescriptions for individual students based on test performance. Version is available for the High School Proficiency Test.

HARDWARE: Apple II family, IBM, or compatible with two disk drives or hard disk, card reader, and printer.

DESCRIPTION: Project Basic III is a generic program that can be used with any textbook series or district-developed instructional program. This competency-based management software program, which can provide day-by-day monitoring of student progress, is used in the following manner. Student is administered a paper/pencil test, and answers are entered on bubble sheet. The bubble sheet is read by the optical scanner, and information gathered from the sheet is automatically recorded on the computer.

Data collection can generate individualized reporting for prescription, skill array, evaluation (history and/or updating performance), and grades. Other reports include class lists, objective lists, test answer keys, test item analysis, student assignments, grouping reports, student report cards, and class, grade, school, and district status reports.

This program is independent of any curriculum system but can refer the user to instructional material - i.e., individual software programs or textbooks. The referral is obtained from information that has been entered previously in the system.

TRAINING: Two days of training are recommended. Cost is approximately $375 per day.

COSTS: Approximately $2495 for one site. Hardware is not included.

DISTRIBUTOR: C.E.O. Software Solutions
205 Main Street
Matawan, New Jersey 07747
(201) 566-4545

[or]

Evans Newton Incorporated
7650 E. Redfield Road, Suite D-5
Scottsdale, Arizona 85260
(800) 433-0544

CONTACT IN NEW JERSEY USING Project Basic III:

Elinor French, Supervisor of Basic Skills — Middlesex County
Middlesex County Vocational/Technical High Schools
112 Rues Lane
East Brunswick, NJ 08816
(201) 257-3300 x45

TITLE: **Testmate - Levels One, Two, Three**
by DataGuide Systems, Inc.

PURPOSE: This program, which has expanding capability, scores and reports on student tests.

HARDWARE: IBM PC or compatible, hard disk or two disk drives, optical mark scanner (card reader), and printer.

DESCRIPTION: Testmate Level One is designed to meet the needs of classroom teachers. The system optically scans and records student answer sheets for up to 80 items and 16 objectives. Scores are provided for number correct, number attempted, percent correct, and master/non-mastery level. Reports are generated based on class list, class objective, class item, and/or individual objective.

Testmate Level Two is for building administrators. The system optically scans and records student answer sheets for up to 240 items and 48 objectives. The same scores and reports as Testmate Level One are generated. Additional reports include building norms, building objective summary, building item summary, high-low rank list, and percent of objectives mastered. The program has features that automatically alphabetize students by class within grade level, merge student files, and print information based upon user-selected criteria.

Testmate Level Three is a test package that is versatile enough to correct any district-made test, plus any national achievement test. The package's modular format allows a school district the flexibility to select only those features that address its specific needs. The system optically scans and records student answer sheets for up to 999 items and 99 objectives. The package produces the reports that Testmate One and Two generate plus administrative summaries, district objective summaries, district item summaries, student skills analysis reports, and student narrative reports. It also reports scale score, grade equivalent, national percentile and stanine, local percentile and stanine, and normal curve equivalent. Data management functions include listing of class, building, and district rank on any subtest or total score; sorting and selecting students according to user-specified criteria; defining up to three user-selected fields; and creating a separate file for user-selected students.

TRAINING: Two days of training are recommended for Testmate Level Three.

COSTS: Testmate Level One: Approximately $600.
Testmate Level Two: Approximately $2000.

Testmate Level Three: Criterion referenced package approximately $4000.
National Achievement Package approximately $6000.
Combined package approximately $7500.

DISTRIBUTOR: C.E.O. Software Solutions
205 Main Street
Matawan, New Jersey 07747
(201) 566-4545

[or]

DataGuide Systems, Inc.
1170 Post Road
Fairfield, Connecticut 06430
203-255-9889

CONTACTS IN NEW JERSEY USING Testmate:

Carlo Ritschl, Coordinator of
Management Information Services
Englewood Board of Education Bergen County
12 Tenafly Road
Englewood, NJ 07631
(201) 833-6078

Jim Campbell, Administrative Assistant Bergen County
Little Ferry Public Schools
123 Liberty Street
Little Ferry, NJ 07643
(201) 641-6186

Michael Lally, Assistant Superintendent Essex County
Belleville School District
190 Cortlandt Street
Belleville, NJ 07109
(201) 450-3446

Terry Rosenfeld, Administrator for Pupil Services Mercer County
Lawrence Township Public Schools
2060 Princeton Pike
Lawrenceville, NJ 08648
(609) 883-0300 x501

Joseph Caruso, Superintendent Monmouth County
Keansburg Borough Public Schools
69 Church Street
Keansburg, NJ 07734
(201) 787-7578

Patricia Marascio, Computer Resource Teacher — Monmouth County
Middletown Board of Education
59 Tindall Road
Middletown, NJ 07748
(201) 671-3850

John Ericson, Superintendent — Sussex County
Frankford Township School District
Box 430
Branchville, NJ 07826
(201) 948-3727

Peter Chletsos, District Basic Skills
Coordinator/Supervisor — Sussex County
Hoptacong School District
P.O. Box 1029
Windsor Avenue
Hopatcong, NJ 07843
(201) 398-5247

IV. CONCLUSION

What does the future hold? A major research report by Education Turnkey Systems (1985) predicted that sophisticated computer management systems will become widely used in education because of the following:

- massive teacher retraining efforts in the use of individualized instruction and instructional management will occur during the late 1980s;
- expert systems technology will transfer from military and industrial training and decision making into education;
- systems will be strongly encouraged by state-level policies; and
- electronic learning publishers will finally make a serious investment in courseware development, building upon advancing technology to meet the needs of the schools.

In a report to the Secretary of Education, United States Department of Education, the National Task Force on Educational Technology (1986) recommended that instructional management systems be implemented in schools during the 1990s. Instructional management was defined by the Task Force as the ability to manage large amounts of information quickly and logically with the computer as the tool managing the information. Computer management allows educators to keep track of varying rates of progress and individual problems without being overwhelmed by record-keeping demands. The Task Force felt that instructional management systems allow each student's progress to be effectivity monitored and encouraged so that only the student's potential limits mastery of subject matter.

It is important to stress that using computer-managed instruction will not insure a good education for each student. The most elaborate management system used with insignificant learning objectives results in superficial learning (Florida Center for Instructional Computing, 1986). Computer-managed instruction must be combined with valid learning objectives to be effective. The HSPT and other standardized tests contain skills that are needed to read, to write, and to perform mathematical computations. Using computer management to monitor proficiency skills that are on these tests provides such relevant learning objectives.

It also is important that the management system benefit the teacher by minimizing record-keeping activities. A good management system records student achievement, keeps records of students' progress, and produces reports and summaries of students' work (Smith, 1986). In other words, it monitors student achievement.

This document contains many systems and software that monitor student achievement. However, the success of any technology endeavor is not just a matter of hardware and software. Successful computerized instructional

management is also a result of extensive research, planning, coordination, and integration by the users of the hardware and software. Educators willing to expend the effort and time necessary to investigate, plan, coordinate, and integrate computer-managed instruction into their schools can change education. Large amounts of information can be managed quickly and logically. Teachers track individual rates of progress while reducing record-keeping demands. Individual students can be effectively monitored and encouraged to develop to their fullest potential. With computer-managed instruction, students can learn and teachers can teach--the computer will take care of the record keeping.

BIBLIOGRAPHY

Artley, A. (1981). Individual differences and reading instruction. The Elementary School Journal, 82(2), 142-151.

Belt, Sidney L. & Skubal, J. (1974). Computer managed instruction: An application. AEDS Journal, 8(1), 24-32.

Belt, Sidney L., & Spuck, D. W. (1973). Computer applications in individually guided education: A computer-based system for instructional management. Wisconsin Research and Development Center for Cognitive Learning.

Birkhead, E. (1986a). Technology update: Hard disks becoming valuable additions to classroom computing. T.H.E. Journal, 14(2), 12-14.

Birkhead, E. (1986b). Technology update: Micros for education: New machines offer expanding capabilities. T.H.E. Journal, 13(7), 14-17.

Birkhead, E. (1985). Technology update: Software development progressing through multi-grade levels. T.H.E. Journal, 13(3), 12-14.

Bitter, G. C., & Camuse, R. A. (1984). Using a microcomputer in the classroom. Reston, Virginia: Reston Publishing Company, Inc.

Brebner, A., Hallworth, H., McIntosh, E., & Wontner, C. (1980). Teaching elementary reading by CMI and CAI. Alberta, Canada: Author. (ERIC Document Reproduction Service No. ED 198 793)

Campbell, D. F. (1977). New roles for occupational instructors. Paper presented at the Texas Post-Secondary Office Occupations Workshop, May 26, 1977. (ERIC Document Reproduction Service No. ED 146 967)

Chapin, J. D., & Patterson, J. L. (1977). The MICA project: A sophisticated operational CMI system. Educational Technology, 17(3), 20-23.

Cheever, D., Coburn, P., Digiammarino, F., Kelman, P., Lowd, B., Naiman, A., Sayer, G., Temkin, K., & Zimmerman, I. (1986). School administrator's guide to computers in education. Reading, Massachusetts: Addison-Wesley Publishing Company, Inc.

Coffman, W., & Olsen, S. A. (1980). The first two years of PLAN: An evaluation of program impact. (Report No. ITP-OP-26). Iowa City: Iowa Testing Program. (ERIC Document Reproduction Service No. ED 190 674)

Dudley, A. (1983a). The Pulaski Street School - School of the Month. Electronic Learning, 2(5), 34-35.

Dudley, A. (1983b). Integrated learning systems. Electronic Learning, 2(5), 72-76.

Education Turnkey Systems, Inc. (1985). Uses of computers in education. (Research Report Series.) Washington, D.C.: National Commission for Employment Policy.

Enell, N. C., & Barrick, S. W. (1983, 1984). An examination of the relative efficiency and usefulness of computer-assisted individualized education programs. Carmichael, California: San Juan Unified School District.

Espeland, R., & Walker, G. (1973). An experimental CMI system on the PDP 11/20 (Report No. AFHRL-TR-73-57). Brooks AFB, Texas: Air Force Human Resources Lab.

Florida Center for Instructional Computing. (1986). Computer managed instruction - What is it? Perspective, 1(1). Tampa: University of South Florida, College of Education.

Gilpin, M. O. (1982). PLATO at Graham Correctional Center: Starting an innovative classroom. Illinois University, Urbana, Illinois: Computer-Based Education Research Lab.

Goodson, B. (1984). Are computer-managed instruction programs worth the trouble? Electronic Learning, 4(1), 8.

Gorth, W. P., & Nassif, P. M. (1984). A comparison of microcomputer-based computer-managed instruction software programs. Educational Technology, 24(1), 28-32.

Gourgey, A., Azumi, J., Madhere, S., & Walker, E. (1984). Computer-assisted instruction evaluation report. Newark Public Schools: Division of Research, Evaluation and Testing.

Havlicek, L., & Coulter, T. (1982). Development of a junior college computer managed instruction reading instruction program. Paper presented at the annual meeting of the American Educational Research Association, New York (March 19-23, 1982). (ERIC Document Reproduction Service No. ED 214 613)

Human Resources Research Organization (1986). Dolphin curricula in Washington, D.C. Hanover, New Hampshire: Houghton Mifflin Company.

Hunnes, F. (1978). The Kelloggsville Story: Learning Management as a means to more effective teaching of reading. Phi Delta Kappan, 60(4), 283-286.

Illick, P., & Taylor, K. (1974). Computers and college composition. Journal of Educational Data Processing, 11(6), 27-31.

Illinois University. (1983). PLATO Education Group. Summary of Activities, 1982-1983 (Report No. CERL-E-24). Urbana, Illinois: Computer-Based Education Lab.

Kimball, G. H. (1982). The effects of utilization of PRI/RS on reading achievement in the Oklahoma City Public Schools: Evaluation of 1981-82. Journal of Research and Evaluation of the Oklahoma City Public Schools, 12(1), 1-59.

Kromhout, O. M. (1970). Conference on computers in undergraduate science education: A computer-assisted and managed course in physical science. Tallahassee: Florida State University, Computer-Assisted Instruction Center.

Laffey, J. (1973). Accountability: History and analysis. Accountability and Reading Instruction. Urbana, Illinois: National Council of Teachers of English.

Levin, D. (1980). In New Orleans schools, computers track students' progress in learning hundreds of skills. Executive Educator, 2(3), 24-25.

Little, J., Mackey, P., & Tuscher, L. (1984). Micros for managers. Trenton, New Jersey: N.J. School Boards Association.

McCombs, B. L. (1979). Computer-managed instruction: Development and evaluation of student skill modules to reduce training time (Report No. AFHRL-TR-79-20). Lowry AFB, Colorado: Technical Training Division of Air Force Human Resources Laboratory.

McHenry, H. (1980). Using computerized data management to increase student responsibility for learning in college mathematics. Association for Educational Data Systems Journal, 13(3), 233-45.

Melin, N. (1986). Networking: Look Ma, No cables. Information Today, 3(4), 11.

Meyer, L. A. (1983). Evaluation research in basic skills with incarcerated adults. (Technical Report No. 303) Cambridge, Massachusetts: Bolt, Beranek and Newman, Inc. (ERIC Document Reproduction Service No. ED 237 954)

The National Task Force on Educational Technology (1986). Transforming American education: Reducing the risk to the nation. A Report to the Secretary of Education, United States Department of Education. T.H.E. Journal, 14(1), 58-67.

New Jersey State Department of Education. (1983). Criteria for District Testing Programs. Trenton, New Jersey.

New Jersey State Department of Education. (1983). Skill Arrays for the New Statewide Testing System. Trenton, New Jersey.

New Jersey State Department of Education. (1983). Statewide Testing System - New Jersey Public Schools. Trenton, New Jersey.

New Jersey State Department of Education. (1985). Helping Educators Prepare Their Students for the High School Proficiency Test. Trenton, New Jersey.

New Jersey State Department of Education. (1986). New Jersey Statewide Testing System - HSPT - Directory of Test Specifications and Items: Reading, Mathematics and Writing - Grade 9. Trenton, New Jersey.

New Jersey State Department of Education. (1986). New Jersey Statewide Testing System - HSPT - School District Guidelines: How to Interpret and Use Student Rosters and Individual Student Reports. Trenton, New Jersey.

Reinhold, F. (1986). Buying a hardware software system. Electronic Learning, 5(5), 42-46,67.

Sloane, E. (1987). What's happening, what's hot for 1987. Electronic Education, 6(4), 17-19.

Spain, T. (1984). Networking. Electronic Learning, 4 (2), 48-51.

Tolman, M. N., and Allred, R. A. (1984). The computer and education (What research says to the teacher). Washington, D.C.: National Education Association.

United States Department of Education. (1986). What works: Research about teaching and learning. Washington, D.C.

Witthuhn, J. (1986). Instructional management: A tool for increasing productivity. T.H.E. Journal, 13(7), 94-96.

INDICES OF SYSTEMS AND SOFTWARE

To assist the reader in locating programs that may be of interest, the systems and software described in this document are indexed in the following manner:

- By Subject
- By Title
- By Producer

INDEX OF SYSTEMS AND SOFTWARE BY SUBJECT

SKILLS SOFTWARE WITH STUDENT RECORD KEEPING FEATURES

Page

Capitalization Plus (Microcomputer Workshops Courseware)..... 15
Cloze Plus Program (Milliken Publishing Company)..... 16
Comprehension Power Program (Milliken Publishing Company)..... 18
Computer Study Program for the HSPT (Instructivision)..... 20
Diascriptive Reading (Educational Activities, Inc.)..... 22
High Intensity Learning System 2 (HILS2) with HILS2 Microcomputer Management (Random House, Inc.)..... 23
Math Assistant I and II (Scholastic, Inc.)..... 25
Math Concepts I and II (Hartley Courseware, Inc.)..... 27
Math Sequences (Milliken Publishing Company)..... 28
Sentence Combining Program (Milliken Publishing Company)..... 31
Skills Bank (Softwriters, Inc.)..... 33
The Spelling System (Milliken Publishing Company)..... 35

COMPREHENSIVE CURRICULA SYSTEMS

Dolphin® Curricula (Houghton Mifflin Company)..... 40
Education Systems Corporation (ESC) Learning System (Education Systems Corporation)..... 42
Microhost Instructional System (Computer Curriculum Corporation).... 44
WICAT System 300 and System 1250 (WICAT Systems Company)..... 48

NETWORKED SYSTEMS

Advanced NetWare and IBM PC Classroom LAN Administration System (International Business Machines Corporation)..... 54
Basic Skills Remediation Curricula (Computer Systems Research, Inc.)..... 58
Integrated Classroom Learning System (Ideal Learning)..... 60
Local PLATO Delivery System (Control Data Corporation)..... 62
New Century Instructional/HSPT Center (New Century Education Corporation)..... 63

DATABASE SOFTWARE

California Achievement Test (CAT) Reports & Test of Cognitive Skills (TCS) Reports (Ridgewood MIS Department)..... 68
Class II with Testbank (Holt, Rinehart and Winston, Inc.)..... 69
Curriculum Management System (Random House, Inc.)..... 71
Curriculum Manager (Corporation for Public Information in Education)..... 72
High School Proficiency Test (HSPT) Reports (Ridgewood MIS Department)..... 73

Page

Instructional Management System Plus (IMS+)
(National Computer Systems)..... 74
MMICRO (Educational Development Corporation)..... 76
Network for Action in Microcomputer Education Project
(N.A.M.E.)..... 78
Preliminary Scholastic Achievement Test (PSAT) Reports
(Ridgewood MIS Department)..... 81
Project Basic III (Evans Newton Incorporated)..... 82
Testmate - Levels One, Two, Three (DataGuide Systems, Inc.)..... 84

INDEX OF SYSTEMS AND SOFTWARE BY TITLE

	Page
Advanced NetWare and IBM PC Classroom LAN Administration System (International Busines Machines Corporation)	54
Basic Skills Remediation Curricula (Computer Systems Research, Inc.)	58
California Achievement Test (CAT) Reports & Test of Cognitive Skills (TCS) Reports (Ridgewood MIS Department)	95
Capitalization Plus (Microcomputer Workshops Courseware)	15
Class II with Testbank (Holt, Rinehart and Winston, Inc.)	69
Cloze Plus Program (Milliken Publishing Company)	16
Comprehension Power Program (Milliken Publishing Company)	18
Computer Study Program for the HSPT (Instructivision)	20
Curriculum Management System (Random House, Inc.)	71
Curriculum Manager (Corporation for Public Information in Education)	72
Diascriptive Reading (Educational Activities, Inc.)	22
Dolphin® Curricula (Houghton Mifflin Company)	40
Education Systems Corporation (ESC) Learning Systems (Education System Corporation)	42
High Intensity Learning System 2 (HILS2) with HILS2 Microcomputer Management (Random House, Inc.)	23
High School Proficiency Test (HSPT) Reports (Ridgewood MIS Department)	73
Instructional Management System Plus (IMS+) (National Computer Systems)	74
Integrated Classroom Learning System (Ideal Learning)	60
Local PLATO Delivery System (Control Data Corporation)	62
Math Assistant I and II (Scholastic, Inc.)	25
Math Concepts I and II(Hartley Courseware, Inc.)	27
Math Sequences (Milliken Publishing Company)	28
Microhost Instructional System (Computer Curriculum Corporation)	44
MMICRO (Educational Development Corporation)	76
Network for Action in Microcomputer Education Project (N.A.M.E.)	78
New Century Instructional/HSPT Center (New Century Education Corporation)	63
Preliminary Scholastic Achievement Test (PSAT) Reports (Ridgewood MIS Department)	81
Project Basic III (Evans Newton Incorporated)	82
Sentence Combining Program (Milliken Publishing Company)	31
Skills Bank (Softwriters, Inc.)	33
Spelling System (Milliken Publishing Company)	35
Testmate - Levels One, Two, Three (DataGuide Systems, Inc.)	84
WICAT System 300 and System 1250 (WICAT Systems Company)	48

INDEX OF SYSTEMS AND SOFTWARE BY PRODUCER

(Addresses and phone numbers are provided on the pages indicated).

Page

Computer Curriculum Corporation
Microhost Instructional System..... 45

Computer Systems Research, Inc.
Basic Skills Remediation Curricula..... 59

Control Data Corporation
Local PLATO Delivery System..... 62

Corporation for Public Information in Education
Curriculum Manager..... 72

DataGuide Systems, Inc.
Testmate - Levels One, Two, Three..... 85

Educational Activities, Inc.
Diascriptive Reading..... 22

Educational Development Corporation
MMICRO..... 76

Education Systems Corporation (formerly ESTC)
Education Systems Corporation (ESC) Learning System..... 42

Evans Newton Incorporated
Project Basic III..... 82

Hartley Courseware, Inc.
Math Concepts I and II..... 27

Holt, Rinehart and Winston, Inc.
Class II with Testbank..... 70

Houghton Mifflin Company
Dolphin® Curricula..... 41

Ideal Learning
Integrated Classroom Learning System..... 60

Instructivision
Computer Study Program for the HSPT..... 20

International Business Machines Corporation
Advanced NetWare and IBM PC Classroom LAN
Administration System..... 56

Page

Microcomputer Workshops Courseware
Capitalization Plus..... 15

Milliken Publishing Company
Cloze Plus Program..... 17
Comprehension Power Program..... 19
Math Sequences..... 29
Sentence Combining Program..... 32
The Spelling System..... 35

National Computer Systems
Instructional Management System Plus (IMS+)..... 74

Network for Action in Microcomputer Education (N.A.M.E.)
Network for Action in Microcomputer Education Project..... 79

New Century Education Corporation
New Century Instructional/HSPT Center..... 64

Random House, Inc.
Curriculum Management System (CMS)..... 71
High Intensity Learning System 2 (HILS2) with HILS2 Microcomputer Management..... 23

Ridgewood MIS Department, Ridgewood Public Schools
California Achievement Test (CAT) & Test of Cognitive Skills (TCS) Reports..... 68
High School Proficiency Test (HSPT) Reports..... 73
Preliminary Scholastic Achievement Test (PSAT) Reports..... 81

Scholastic, Inc.
Math Assistant I and II..... 26

Softwriters, Inc.
Skills Bank..... 33

WICAT Systems Company
WICAT System 300 and System 1250..... 49

APPENDIX A: RESOURCES

- Books and Periodicals
- Related Documents of the New Jersey Department of Education
- Contacts in New Jersey

BOOKS AND PERIODICALS

There are a variety of print-based sources that would be useful for educators investigating computerized instructional management. Following is a representative sampling of the sources on the market.

Classroom Computer Learning
2451 E. River Road
Dayton, Ohio 45439-9988

A monthly educational periodical featuring articles on hardware and software.

Computer Decisions
10 Mulholland Drive
Hasbrouck Heights, New Jersey 07604

A biweekly magazine with the emphasis on administrative hardware and software applications. Target audience is management.

The Computing Teacher
University of Oregon
1787 Agate Street
Eugene, Oregon, 97403-1923

Published by the International Council for Computers in Education, this is a monthly periodical with articles featuring hardware and/or software.

The Digest of Software Reviews-Education
School and Home Courseware, Inc.
3091 West Mesa Suite F
Fresno, California 93704
(209) 431-8300

(Available at Educational Technology Training Centers)

A continuing series (currently consisting of five volumes) that contain a wide selection of software programs that have been reviewed by educational computing journals.

The Educational Networker
Corvus Systems
2100 Corvus Drive
San Jose, California 95124

The Corvus' Educator Newsletter contains information on networking educational microcomputers that enhance aspects of curriculum, instruction, network and software management.

Educational Technology
(The Magazine for Managers of Change in Education)
Educational Technology Publications, Inc.
720 Palisades Avenue
Englewood Cliffs, New Jersey 07632

A monthly magazine with articles that examine aspects of educational technology by administrators, supervisors, teachers, and business representatives.

Electronic Learning
Scholastic, Inc.
P.O. Box 2041
Mahopac, New York 10541

Magazine published eight times during the year (monthly September through April, bimonthly November/December and May/June). Contains articles on hardware and software, surveys, and commentaries.

LAN Magazine
12 West 21 Street
New York, New York 10010

A monthly magazine that covers local area network products (software and hardware) and local area network peripherals.

Micros for Managers
A Software Guide for School Administrators
by Joseph R. Little, Philip E. Mackey, and Leroy J. Tuscher
Trenton, New Jersey: New Jersey School Boards Association.
1984-85 and 1985-86 (supplement)

The 1984-85 edition and 85-86 supplement contain more than 200 programs with educational administrative applications. The descriptions include software descriptions, system and peripheral requirements, software cost, and user references. Some descriptions include printouts of the computer product.

Micro to Mainframe - Creating an Integrated Environment
by Michael Durr and Dwayne Walker.
Reading, Massachusetts: Addison-Wesley Publishing Company, 1985.

The book is designed to provide basic information necessary for those considering the development of micro-mainframe integration. Technical and managerial issues are discussed.

Micro-Courseware: PRO/FILE & Evaluation
Educational Products Information Exchange (EPIE) Institute
P.O. Box 839-M
Water Mill, New York 11976
(516) 283-4922

(Available at ETTCs and county offices of education)

The software programs are reviewed with in-depth analysis. Review information includes the content of the program, how the software develops goals and objectives, and the features of the evaluation and management components.

MicroSIFT Courseware Evaluation Reports
Northwest Regional Educational Laboratory
101 S.W. Main Street, Suite 500
Portland, Oregon 97204

Comprehensive printed reports on K-12 software for many subjects. Each report includes content and structure summaries, major strengths and weaknesses, and potential uses. MicroSIFT is also available online from Resources in Computer Education (RICE) database via Bibliographic Retrieval Services (BRS).

Software Reports
The Guide to Evaluated Educational Software
Trade Service Publications, Inc.
10996 Torreyana Road
San Diego, California 92121

Available in two forms, a master set or a softcover edition. The reports review educational software for microcomputer brands. Each review includes a summary of the program's features, a description of the program, criteria, overall grade, and comments made by evaluators.

School Administrator's Guide to Computers in Education
by Daniel S. Cheever, Jr., Peter Coburn, Frank Digiammarino, Peter Kelman, Beth T. Lowd, Adeline Naiman, Gus A. Sayer, Kenneth Temkin, and Isa Kaftal Zimmerman.

Reading, Massachusetts: Addison-Wesley Publishing Company, 1986.

A 356-page book compiled for leaders in districts either considering or using computers. It provides information about the characteristics, capabilities, and possible applications of computers in education. Contains a comprehensive resource listing of publications, on-line information sources, etc.

T.E.S.S.
The Educational Software Selector
Educational Products Information Exchange (EPIE) Institute
P.O. Box 839-M
Water Mill, New York 11976

(Available at ETTCs and county offices of education)

This is an annual publication. The 1986-87 edition contains detailed descriptions of more than 7,000 pieces of educational software programs including information on availability of network version. Programs are organized by curriculum area, hardware configuration, and grade level. Listings include software for class management and administration applications.

Technology Programs that Work
Michael B. Webb, Editor
National Diffusion Network
714 Brown Building
Washington, D.C. 20202

The book contains information on government-sponsored projects involving technology and education that are exemplary. Some of the described projects have computer management features. NDN is a nationwide system of the U.S. Department of Education established to help school districts identify and adopt educational programs that have documented evidence of effectiveness. (The NDN State Facilitator is located in the Educational Information and Resource Center (EIRC), Sewell. See "Contacts in New Jersey", pages 110-114, for the address.)

T.H.E. Journal
(Technological Horizons in Education Journal)
2626 S. Pullman
Santa Ana, California 92705

Available free of charge on a limited basis to qualified educators, this journal is published six times a year. Articles report on applications of educational technology. Brief descriptions are given of projects, publications and software. Reader can send for more details from publishers or manufacturers through the inquiry service card.

RELATED DOCUMENTS OF THE NEW JERSEY DEPARTMENT OF EDUCATION

The following publications, developed by the department, are directed toward helping educators, parents, and students to prepare for the High School Proficiency Test. Items marked with an asterisk are currently in development or production; those listed without an asterisk have been printed and circulated.

The documents in circulation have been distributed to all school districts in New Jersey, and examination copies are available at county offices. A price list and order form for these publications are available upon request to: Distribution Services, New Jersey State Department of Education, 225 West State Street, CN 500, Trenton, New Jersey 08625.

THE HSPT

1985-86 HSPT Student Review Manual (September, 1985)

HSPT School District Guidelines (1986)

HSPT Directory of Test Specifications and Items (September, 1986)

HSPT Pupil Information Booklet (September, 1986)

Getting the Most from the HSPT: A Practical Guide to Resolving Curriculum Design and Delivery Problems (June, 1985)

BASIC SKILLS AND THE HSPT

Catalogue of Basic Skills Program Descriptions (May, 1985)

Basic Skills Resource Guide (June, 1985)

Basic Skills Program Improvement Guide (July, 1985)

Effective Practices in Secondary Basic Skills Programs: A Compendium of Case Studies (September, 1986)

Individual Student Improvement Plans: A Guide for the Development and Use of ISIPs (Spring, 1985)

Effective Practices for Bilingual/ESL Teachers: Classroom Strategies for Teachers of Limited English Proficient Students (December, 1985)

READING

HSPT Skill Array: Reading (September, 1985)

Improving Students' Abilities To Read and Think: A Resource Guide for Reading Teachers of Junior High School Students (June, 1985)

Improving Students' Abilities to Read and Think: Teaching Strategies Series - Booklet A - Prereading Strategies (December, 1985; Revised Edition 1986)

Improving Students' Abilities to Read and Think: Teaching Strategies Series - Booklet B - Prereading Strategies (December, 1985; Revised Edition 1986)

*Improving Students' Abilities to Read and Think: Teaching Strategies Series - Booklet C - Prereading Strategies (Fall, 1987)

Improving Students' Abilities to Read and Think: Training Manual (Winter, 1987)

*Primary and Intermediate Skills Array: Reading (Winter, 1988)

Computer and Video Instructional Materials - HSPT Resource Guide: Reading (Fall, 1986)

WRITING

HSPT Skill Array: Writing (September, 1985)

Writing in the Content Areas: A Guide for Instructional Improvement (May, 1985)

Understanding the Writing Process: Introducing Students to Composing (June, 1985)

The Registered Holistic Scoring Method for Scoring Student Essays (September, 1985; Revised, 1986)

The Registered Holistic Scoring Method for Scoring Student Essays: Scoring Guide for Training (November, 1985)

Conferencing: Assessing Growth And Change in Student Writing (June, 1986)

Writing as a Recursive Process [Part of Understanding the Writing Process: Introducing Students to Composing-Teaching Strategies Series 1] (Fall, 1986)

*Primary and Intermediate Skill Array: Writing (Winter, 1988)

Computer and Video Instructional Materials - HSPT Resource Guide: Writing (Spring, 1986)

Improving Writing Instruction A Process Approach: A Staff Training Manual for Use with the Maryland Instructional Television Videotapes (Spring, 1984)

MATHEMATICS

HSPT Skill Array: Mathematics (September, 1985)

Improving Mathematical Problem-Solving in the Middle Grades (May, 1985)

Improving Mathematical Skills Assessed on the HSPT: Measurement and Geometry (September, 1985)

Improving Mathematical Skills Assessed on the HSPT: Pre-Algebra (Spring, 1986)

*Improving Mathematical Skills Assessed on the HSPT: Computation of Percents (Fall, 1986)

*Improving Mathematical Skills Assessed on the HSPT: Computation of Decimals (Winter, 1988)

*Primary and Intermediate Skill Array: Mathematics (Winter, 1988)

Computer and Video Instructional Materials-HSPT Resource Guide: Mathematics (Winter, 1987)

EDUCATIONAL TECHNOLOGY

Educational Technology in New Jersey: A Plan for Action, (May, 1986)

Computer and Video Instructional Materials - HSPT Resource Guide: Writing (Spring, 1986)

Computer and Video Instructional Materials - HSPT Resource Guide: Reading (Fall, 1986)

Computer and Video Instructional Materials - HSPT Resource Guide: Mathematics (Winter, 1987)

Computer and Video Instructional Materials - Resource Guide: Elementary Science (Fall, 1986)

Using the Educational Technology Network (ETN): A User's Guide: (Fall, 1986)

Educational Technology Resources in the New Jersey State Department of Education (Brochure)

CONTACTS IN NEW JERSEY

Computerized instructional management can be a major undertaking for a school district. It is helpful in planning the project to consult with districts using management systems, training centers, resource people, and educational users groups. Some of the districts in New Jersey that are using a system or software program described in this document are listed after the product's description. Other helpful contacts are listed in this section.

Educational Technology Training Centers

The Educational Technology Training Centers (ETTCs) are operated by the New Jersey State Department of Education under the direction of the Regional Curriculum Services Units, Division of County and Regional Services. The ETTCs provide training for educators on a year-round basis. A large selection of technology-related books, periodicals, catalogs, and producer information are available at each center. The ETTCs are demonstration and evaluation sites for hardware and software with more than 600 software programs available for on-site preview. Hardware systems include Apple, Commodore, Franklin, IBM, Radio Shack, etc. Audio-visual aids, sophisticated graphics devices, laser video disc players, and other technology equipment are also available for demonstrations. The centers are public domain computer software depositories and have video disc materials and video tapes.

For a demonstration of hardware and/or software, call the nearest ETTC to arrange an appointment.

EDUCATIONAL TECHNOLOGY TRAINING CENTER - NORTH
Darlene Nowak, Coordinator
240 South Harrison Street
East Orange, New Jersey 07018
(201) 266-8694

Region Served: Counties of Bergen, Essex, Hudson, Morris, Passaic, Sussex, and Warren

EDUCATIONAL TECHNOLOGY TRAINING CENTER - CENTRAL
Ruth M. List, Coordinator
200 Old Matawan Road
Old Bridge, New Jersey 08857
(201) 390-6030

Region Served: Counties of Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Somerset, and Union

EDUCATIONAL TECHNOLOGY TRAINING CENTER - SOUTH

J. Evans Jennings, Jr., Coordinator
c/o Gloucester County College
Instructional Center, Room 420
Tanyard Road
Sewell, New Jersey 08080
(609) 468-5530

Region Served: Counties of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, and Salem

Educational Technology Contact at the County Level

Each of the county offices of the New Jersey Department of Education have resources and information on technology helpful to local educators. The following is a list of the technology people to contact at the respective county offices of education.

County	Name	Phone
Atlantic	Mr. William Hall	(609) 625-7000
Bergen	Mr. Harry Stein	(201) 935-1500
Burlington	Mr. Michael Baltish	(609) 261-5060
Camden	Mr. Joseph Corcoran	(609) 627-1556
Cape May	Ms. Betty Zaleski	(609) 465-7911
Cumberland	Ms. Jean Nocon	(609) 451-8000
Essex	Ms. Suzanne Steele	(201) 673-8030
Gloucester	Mr. Glenn Earl	(609) 629-5900
Hudson	Mr. Charles Weening	(201) 795-6547
Hunterdon	Mr. Frank Arch	(201) 788-1414
Mercer	Dr. Maryann Peifly	(609) 588-5872
Middlesex	Dr. John Coogan	(201) 390-6000
Monmouth	Mr. Michael Maddaluna	(201) 431-7823
Morris	Ms. Doris Smith	(201) 829-8571
Ocean	Ms. Janet Beronio	(201) 929-2079
Passaic	Mr. John Zeug	(201) 881-7123
Salem	Dr. June Lang	(609) 769-2700
Somerset	Mr. Sal Abitanta	(201) 231-7171
Sussex	Dr. Judith Kohlbach	(201) 383-2521
Union	Mr. Stanley Rothman	(201) 233-9310
Warren	Ms. Jane Keehn	(201) 475-5361

Educational Technology Resource Organizations in New Jersey

There are several educational computer users' groups and a variety of resource centers throughout the state. Listed on the following pages are organizations that are sources for consultation when considering an educational technology purchase or project.

Asbury Park Computing Cooperative
c/o Robert Osgoodby
Asbury Park School District
1506 Park Avenue
Asbury Park, New Jersey 07712
(201) 776-2600

(Office computing services are offered to assist school districts.)

Catalyst
Irving Bloom, Director
Jersey City State College
2039 Kennedy Boulevard
Jersey City, New Jersey 07305
(201) 547-3094

(This center for computer learning includes teacher training, inservice workshops, and on-site software previews/evaluation.)

Center for Pre-college Programs/Educational Resource Lab
Howard Kimmel, Director
New Jersey Institute of Technology
323 King Boulevard
Newark, New Jersey 07102
(201) 596-3574

(This center provides educators with computer training and access to software/hardware for review purposes.)

Computers, Learners, Users Educators Association (CLUES)
c/o Henry Peterson, Executive Director
50 Nellis Drive
Wayne, New Jersey 07470
(201) 696-3157

(This is a professional organization for teachers.)

Educational Computer Association of Morris (ECAM)
c/o Richard Walsh
Center Grove School
Schoolhouse Road
Randolph, New Jersey 07869
(201) 627-8200, X26 (Ask for Bill Moore)

(The group meets monthly for demonstrations and/or hands-on training; newsletters are published for teachers and administrators.)

Educational Information and Resource Center (EIRC)
Richard Titus, Director
207 Delsea Drive
Route #47
RD #4 - Box 209
Sewell, New Jersey 08080
(609) 228-6000

(EIRC is a site for National Diffusion Network's State Facilitator)

Mathematics Computer & Science Instructional
Improvement Project (McSiip)
McSiip Offices
Robinson Building, Room 207
Glassboro State College
Glassboro, New Jersey 08028
(609) 863-7310

(Regional center supporting various activities in mathematics, computer science, and science is part of the McSiip Project.)

Network for Action in Microcomputer Education (N.A.M.E.)
c/o Henry Petersen/Ned Davis
Fallon Center
51 Clifford Drive
Wayne, New Jersey 07470
(201) 694-7800

(N.A.M.E. offers technical aid, in-service training, and information for educators.)

New Jersey Educational Computer Network (NJECN)
3900 Park Avenue
Edison, New Jersey 08820
(201) 549-9700

(Computer services for companies and state agencies that do not have a mainframe computer are offered.)

New Jersey Vocational Education Resource Center (NJVERC)
Cambridge Park School
Crest Way
Aberdeen, New Jersey 07747
(201) 290-1900

(NJVERC is a source of software and information about microcomputers and educational technology with emphasis on vocational-technical career education.)

State Microcomputer Users' Group (S.M.U.G.)
O.T.I.S., Office Systems Center
840 Bear Tavern Road, CN 215
West Trenton, New Jersey 08625
(609) 771-1847 (Ask for Office Systems Center)

(Monthly meetings are held to discuss and demonstrate hardware and software with administrative applications)

Sussex County Users' Group
c/o Fred Zimmerman
Wallkill Valley Regional High School
Grumm Road
Hamburg, New Jersey 07419
(201) 383-2521 (Sussex County Office)

(This educational computer users organization meets at Wallkill Valley periodically to discuss educational technology.)

Wayne Computing Cooperative
c/o Henry Petersen
50 Nellis Drive
Wayne, New Jersey 07470
(201) 694-8600 X285

(The cooperative is a software clearinghouse, a source of MECC materials, and a library of general information.)

APPENDIX B: READER INPUT

- Evaluation Form
- CMI Program Identification Form

MONITORING STUDENT PROFICIENCY WITH COMPUTER-MANAGED INSTRUCTION: HSPT AND OTHER ASSESSED SKILLS

EVALUATION FORM

The Department of Education invites your feedback after you have reviewed this document. Your input is a valuable resource to us when planning products that reflect your interest and needs. Please circle your responses.

	AGREE				DISAGREE
• The document provides information about the concept of computer-managed instruction and related research.	5	4	3	2	1
• The length of the descriptions of systems and software is appropriate.	5	4	3	2	1
• The descriptions increase awareness of the types of computer-managed instruction materials.	5	4	3	2	1
• The appendix is a valuable listing of resources.	5	4	3	2	1
• Are you presently using one or more of the CMI systems or software programs in this document?			YES		NO

If "yes": Which one(s)? _____

Please evaluate the CMI you are using:

Excellent Very Good Good Fair Poor

(Add comments on reverse side, if you feel they would be helpful.)

If "no": Are you planning to use a CMI system?

Has the document helped you?

- Is there additional information you would find useful in the document? YES NO

  If "yes", please indicate:

- Are there other Educational Technology topics that you would like the New Jersey Department of Education to explore? YES NO

  If "yes", please indicate:

- How would you describe yourself as a computer user?

  Novice Somewhat experienced Experienced

- Overall evaluation of the document:

  Excellent Very Good Good Fair Poor

- Would you be interested in a statewide conference dealing with the topics of this document? YES NO

The following information is voluntary, yet helpful:

Name: _____

Position: _____

School: _____

School District: _____

Address: _____

_____

Thank you for your interest and help.

Please return this form to:

CMI Document Evaluation
Educational Technology Unit - GAE
New Jersey Department of Education
225 West State Street, CN 500
Trenton, New Jersey 08625

CMI PROGRAM IDENTIFICATION FORM

If you currently are using a computer-managed instruction program in your classroom, school, and/or district, we would appreciate your input for updating/revising this document.

Title of program and page number (if included in this guide):

May we add your name to the list of districts using CMI: YES NO

If your program is not in this guide, please fill in the following information. The New Jersey Department of Education would like to consider it for inclusion when the document is revised/updated:

Title:_____

Publisher:_____

Hardware:_____

Purpose:_____

Brief Description (including grade level where applicable):

Contact Person_____

Position_____

School and/or District_____

Address_____

_____

Phone #_____

Please copy and complete as many of these forms as you wish and mail to:

New Jersey Department of Education
Educational Technology Unit - GAE
CMI Identification Form
225 West State Street, CN 500
Trenton, New Jersey 08625

JS/pc:1/3427 & 3815j

NOTES